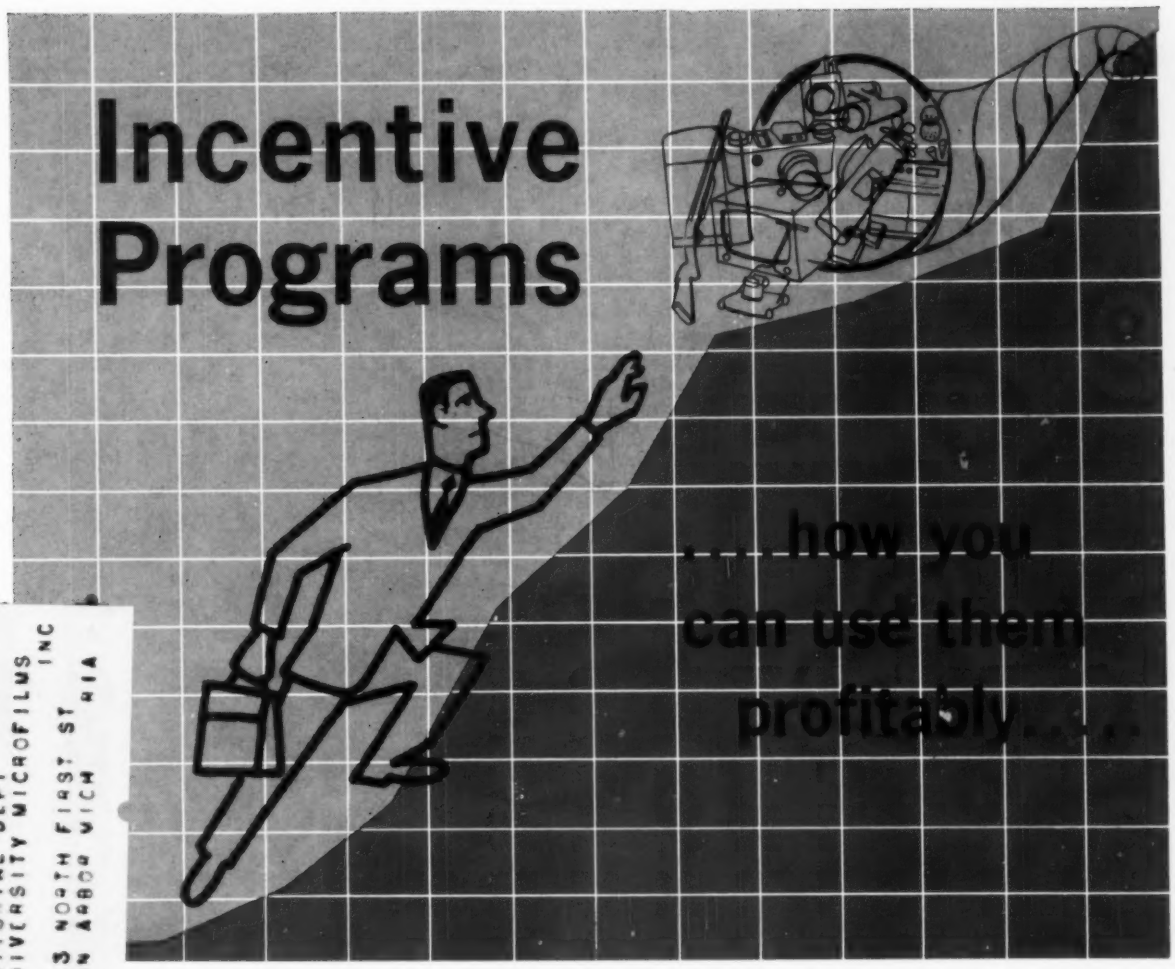
The REFRIGERATION & AIR-CONDITIONING Business
SEPTEMBER 1959

Incentive Programs



EDITORIAL DEPT
UNIVERSITY MICROFILMS INC
313 NORTH FIRST ST
ANN ARBOR MICH

AN INDUSTRIAL PUBLISHING CORPORATION MAGAZINE

THE MAGAZINE OF MARKETING • Sales • Application • Installation • Service • Business Management



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Its diameter, wall thickness and temper meet exacting specifications. It is immaculately clean and dehydrated . . . with the ends sealed at the factory to keep it that way until used. It has an inside surface that is glassy smooth to provide maximum uniformity of flow. It has been tested and re-tested, checked and re-checked for imperfections. It is a tube made to such a high level of craftsmanship and quality . . . it is even used for delicate instrumentation applications without any special processing.

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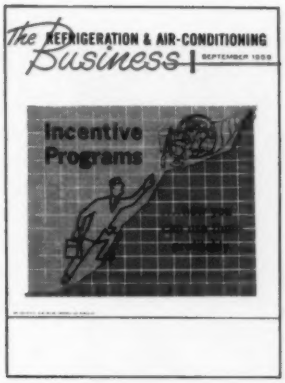
MADE IN U.S.A.
TO THE STANDARDS
OF AMERICAN INDUSTRY

Specify Copper Tube for Air Conditioning and Refrigeration

COPPER & BRASS RESEARCH ASSOCIATION • 420 LEXINGTON AVE., NEW YORK 17, N. Y.

Circle No. 4 on Reader Service Card

reader's guide to The Refrigeration & Air-Conditioning Business *for September 1959*



THE COVER: Incentive programs offer refrigeration and air-conditioning contractors a good way to motivate their salesmen. Properly used, an incentive program can mean plus sales for you. Here are some things you should consider, and some pitfalls to avoid in planning such a program.

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37 **INDUSTRY FIGURES NEEDED AT LOCAL LEVEL**
Without them, contractors need a crystal ball to determine their sales potential

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. . . even though his installation photos don't show a single piece of equipment

40 **INCENTIVE PROGRAMS — HOW YOU CAN USE THEM PROFITABLY**
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You have to understand these trouble-makers before you can successfully control them

44 **DON'T LEAVE IT TO CHANCE**
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. . . from the same system provide summer comfort and winter sport for motel guests

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Wilted flowers are tough to sell, and this florist knows how to keep 'em fresh

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Leaves more useful shelf space available in reach-ins, back bars, and under-counter cabinets because it has an *extremely flat, thin silhouette of only 4½".*

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- **Life-lubricated, impedance-protected motor**
- **Attractive grained aluminum cabinet.**

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Rough surface prevents free circulation of moisture-filled air—creates dead air barrier.

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Built-in moisture barrier assures utmost insulating efficiency.

3. INSIDE
Dead air is trapped between "corrugated strands", forms added insulation barrier.

NoDrip Tape means more profit, less work on every job . . . saves you time, labor, material. NoDrip Tape eliminates most multiple wrappings needed with thinner wraps . . . inferior wraps.

Why pay more when you can buy the handy 16 foot roll of ¼" thick NoDrip Tape at less than half the cost of a roll of ordinary ⅛" wrapping...and *far* below the cost of pre-formed foam cellular insulations?

Next time an equipment cold line job calls for *permanent* protection against condensation drip, "sweating" or frost, insist on using NoDrip Tape. Stops rust and corrosion, too . . . holds temperatures more constant and increases the efficiency of the cooling equipment.

NoDrip Tape is pliable, cork-filled and completely self-adhering. Easy to work with . . . forms an air-tight, 100% vapor and moisture proof jacket. Needs no tools, vapor seals, fasteners, brads or adhesives.

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For large pipes, tanks, air ducts, we recommend NoDrip Plastic Coating for permanent protection from condensation, rust and corrosion. Another fine Mortell refrigeration product, NoDrip can easily be applied by brush or trowel to metal, concrete, brick, plaster, tile or composition surfaces.

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EVEN AROUND JOINTS, TEES, VALVES OR ANGLES



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Makers of Mortite Caulking Cord and Mortite Caulking Gum

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O.K.! Send me full information about the complete line of Mortell refrigeration products.



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Firm____
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at



Contractor: Roland Thompkins & Son, Inc. Hawthorne, N.Y.

Consulting Engineer: Giffels & Vallet, Inc. Detroit, Mich.

Architect: L. Rossetti Detroit, Mich.

—the Comfort Computation

came out . . .

DUNHAM-BUSH



The Dunham-Bush 'HAH' is designed for ceiling installation which conserves space vitally needed for engineering purposes.

Of course, IBM really didn't employ any of its masterfully precise computers to predetermine whose air conditioning equipment would best serve their new Engineering Laboratory at Kingston, New York.

But all equipment selected was calculated to meet the important demands modern industry must make to ensure personnel comfort and equipment protection.

For example, here at Kingston, 92 engineered Dunham-Bush Horizontal Air Handling units efficiently deliver conditioned air to create the climatic interior that's seasonally required. Dunham-Bush units have operational versatility that enables them to cool, heat, filter, or dehumidify air, according to temperature requirements. Additionally, such Dunham-Bush heating products as finned tube radiation with expanded metal covers, horizontal and cabinet type unit heaters, and F&T traps and strainers are used throughout the laboratory.

Contact your nearest Dunham-Bush sales representative for assistance when your next heating or cooling job arises.

You'll find that this one source—one responsibility is of inestimable value.



Close-up of Dunham-Bush 'HAH' which cools, heats, filters, dehumidifies air.

Dunham-Bush, Inc.

WEST HARTFORD 10 • CONNECTICUT • U. S. A.

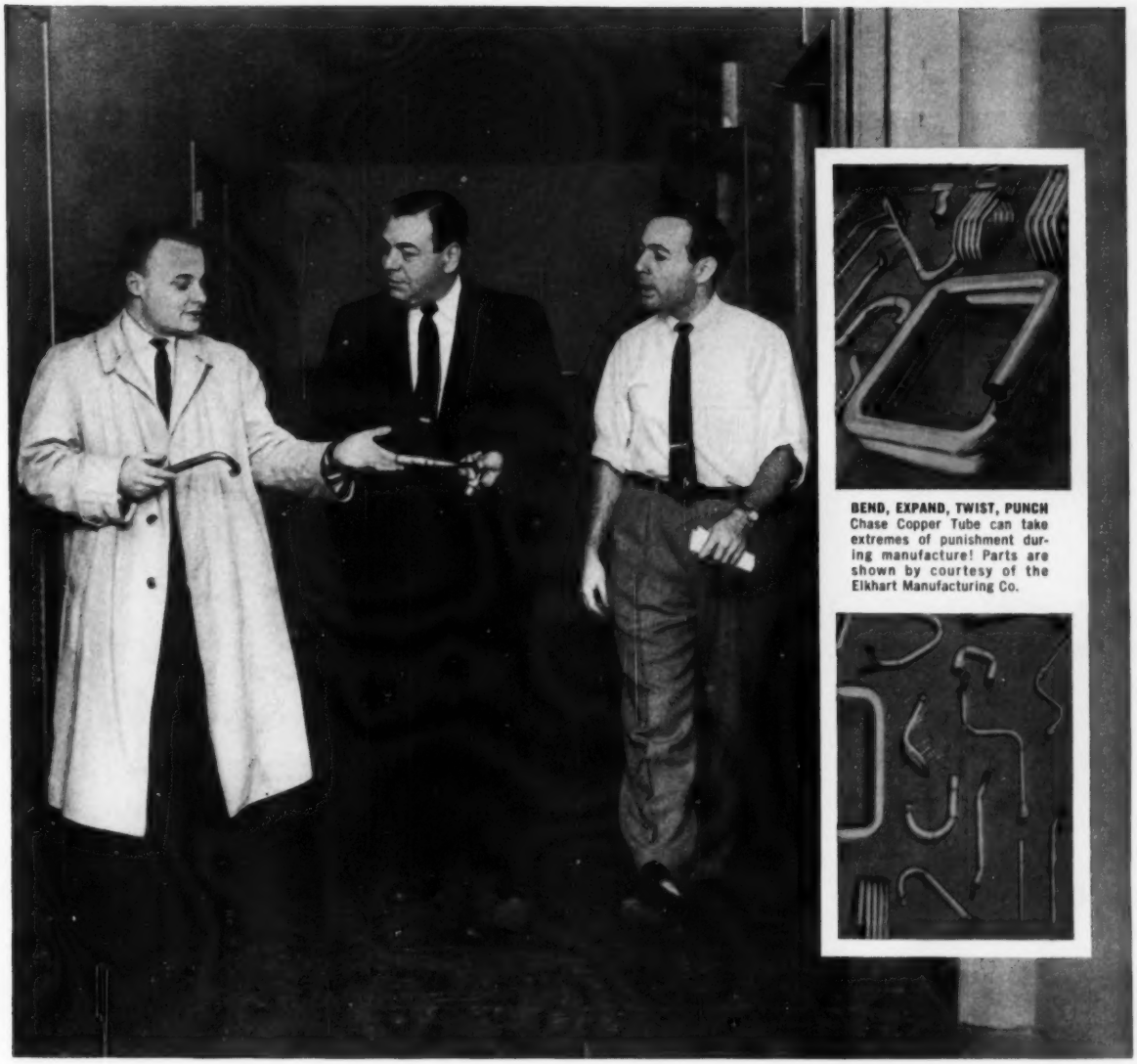
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BEND, EXPAND, TWIST, PUNCH Chase Copper Tube can take extremes of punishment during manufacture! Parts are shown by courtesy of the Elkhart Manufacturing Co.

You make them better with Chase® Copper Tube!

No matter how unusual the shape, you can fabricate fittings, headers, coils and other parts with greater ease and economy if you turn to Chase® Copper Tube. Careful testing plus Chase expert metallurgy assures easier bends, easier working of metal without setting up stresses that lead to cracks and premature failure. Ask about the extra long lengths of Chase Air Conditioning and Refrigeration Tube that can be shipped on the new Chase Disposable Reel... latest way to reduce costs, save time, and get manufacturing economy.

There's a Chase warehouse and sales office in the cities listed below, ready to serve you.

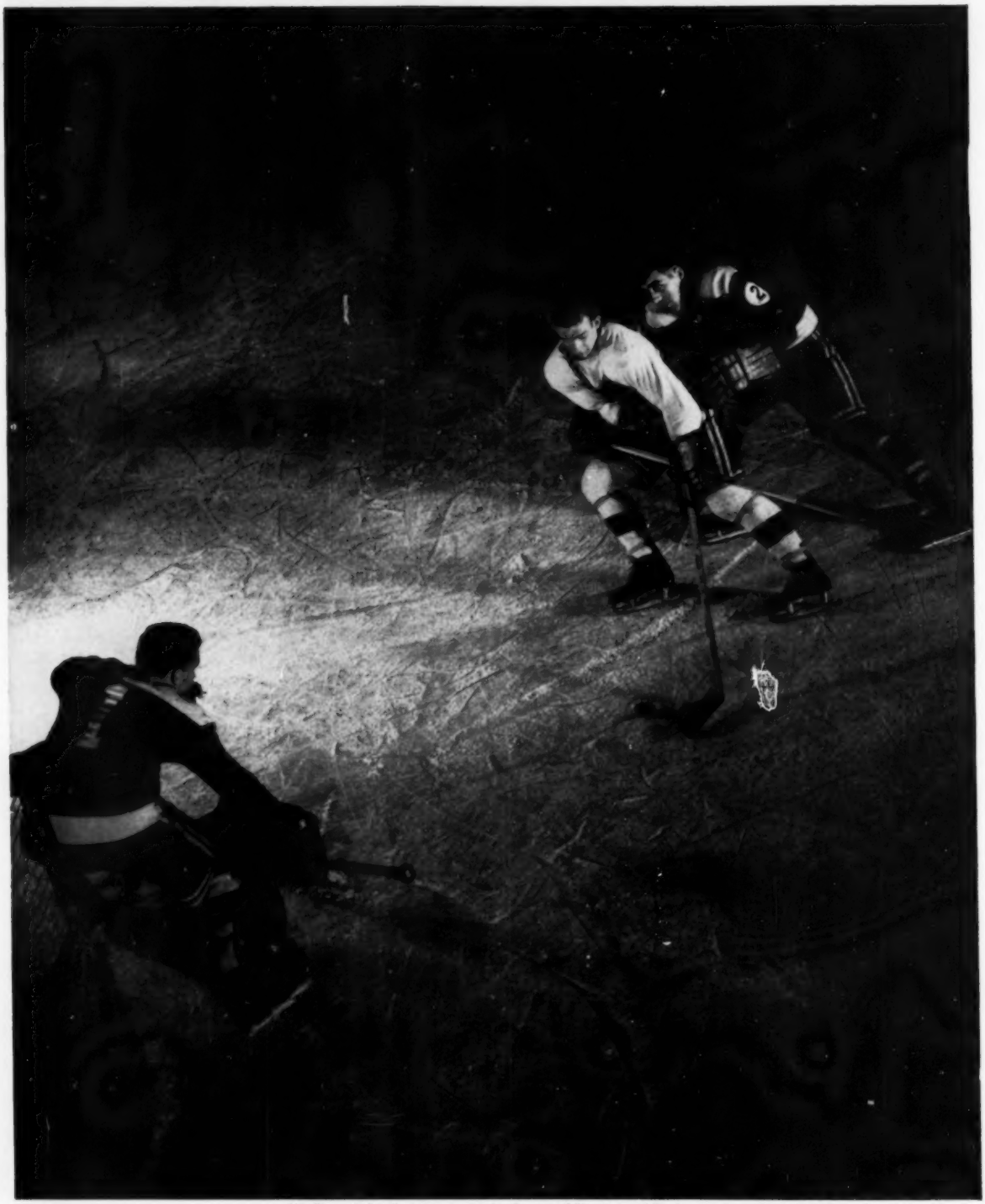
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In skating rinks...



Hockey—"the fastest game in the world"—is rapidly becoming America's number one winter spectator sport. For years, players from Canada—where the temperatures favor hockey all winter long—have dominated the National Hockey League. Recently, however, an increasing number of American schools and colleges have installed artificial ice rinks on the campus. As a result, we may soon see more hockey players from the U.S. making the pro teams.

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skyscrapers...schools...

You'll find genetron®

SUPER-DRY REFRIGERANTS

approved! accepted! preferred!



New air-conditioned office buildings like this are changing New York City's skyline every day. By 1960, it's expected that more than 50% of major office space in Manhattan will be air-conditioned. *Photo courtesy Carrier Corp.*



School rooms never used to be like this! Today's classrooms are lighter, brighter—and more comfortable, thanks to modern air-conditioning systems that keep temperatures level and end drafty or stuffy classrooms. *Photo courtesy Brunswick-Balke-Collender Co.*

Wherever modern refrigerants are used for air-conditioning and refrigeration, you can depend on super-dry "Genetrons." For maximum dryness. For unsurpassed quality. For dependable, trouble-free performance. Leading manufacturers of refrigeration and air-conditioning equipment use "Genetrons" for original charge . . . approve them for replacement. Refrigeration engineers specify them. Wholesalers recommend them.

"Genetron" Super-Dry Refrigerants are available from wholesalers everywhere, coast to coast. See your wholesaler. Insist on "Genetron"!

genetron 11 ORANGE LABEL CCl_3F TRICHLOROMONOFLUOROMETHANE
genetron 12 WHITE LABEL CCl_2F_2 DICHLORODIFLUOROMETHANE
genetron 22 GREEN LABEL $CHClF_2$ MONOCHLORODIFLUOROMETHANE
genetron 113 PURPLE LABEL $C_2Cl_3F_3$ TRICHLOROTRIFLUOROETHANE
genetron 114a BLUE LABEL $C_2Cl_2F_4$ DICHLOROTETRAFLUOROETHANE

Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.

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ABOUT People

Ray K. Mlodoch has been appointed sales representative in the Chicago metropolitan area for Wolverine Tube, Div. of Calumet & Hecla, Inc. Mlodoch will concentrate his efforts on the sale and promotion of Wolverine's copper water tube, refrigeration service tube and automotive tube to wholesalers.



•

James H. Binger, vice president, Minneapolis-Honeywell Regulator Co., has been elected to the company's board of directors. Binger joined the company in 1943 and has held a variety of administrative assignments. As vice president, he has responsibility for the management of the company's temperature controls group.

•

Sylvan E. Leinwand, has been appointed eastern regional manager for Detroit Controls Div. of American-Standard. Leinwand joined the company in 1948 as a territory representative. Since 1957 he has served as a specialist on Navy and refrigeration controls. In his new position he will headquarter at Stratford, Connecticut.



•

Two new appointments have been announced by Dunham-Bush, Inc. **Frank D. Klein** has been named product manager, air-conditioning products, and **E. Harold Brown** has been appointed field sales engineer covering the Buffalo, N. Y. area. He will be assigned to the Cleveland, Ohio district office. Klein will be located in the company's main office at West Hartford, Conn.

•

Stanton W. Smith has been appointed Milwaukee office manager of Ilg Electric Ventilating Co. Smith has been assigned to the sales office in Cincinnati, Ohio.

•

Amstan Supply, Div. of American-Standard has announced the appointment of **C. Gilmore Ruston** to the position of vice president, field operations. Ruston will supervise, through regional managers, 68 branch and warehouse operations. Ruston joined the company in 1930 and has recently served as marketing manager.



•

W. E. Horn has been appointed manager of refrigerant chemicals sales for American Potash & Chemical Corp. Horn formerly served as a district sales manager for the company's agricultural chemicals section.

•

Edward F. Schweich has been elected president of Lewin-Mathes Co., Div. of Cerro de Pasco Corp. Schweich succeeds Richard H. Lewin, who recently was appointed vice president of Cerro de Pasco. With Lewin-Mathes for 30 years, Schweich served as secretary of the company, and last year was promoted to executive vice president.



Leo J. Munchhof, associated with Recold Corp. since 1956, has been appointed advertising and sales promotion manager. Munchhof has been assistant advertising and sales promotion director since September, 1957.

•

Machinery and Systems Div., Carrier Corp., has announced the appointment of **Victor C. Nelson** as sales manager for cooling towers and sheet metal specialties. During his 22 years with the company, Nelson has handled construction, service and development engineering posts in many of the division's sales offices.



•

Harry E. Musgrave has been appointed to the newly opened north central region office of International Radiant Corp. The new office is located in Chicago, Ill. The company's new sales and service office in Ventura, Calif., will be manned by **Robert N. Williams,** newly appointed west coast representative.

•

Hunter Mfg. Co. has named **Ray Levis** as sales manager for transport heating and refrigeration equipment. Since 1957 Levis had been head of sales and distribution for Tru Kooler, Inc., Oelwein, Iowa. For six years prior he had been in charge of sales for Talbert-Thomas Co.'s Tru Kooler Div. in Chicago.



•

C. A. Pickett has been appointed manager of the merchandise division of American Air Filter Co., Inc. He will be responsible for coordinating the integration, development and growth of the company's marketing activities of product lines which can be mer-

Crystal Tips "BITS" Ice — finest ice for hundreds of uses!



ICED TEA



ICED SALADS



ICED SEA FOODS



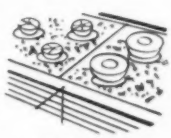
ICED FOOD DISPLAYS



ICED DRINKS



ICED MEATS AND FISH



ICED CAFETERIA DISPLAYS



AND MANY OTHER USES

GOOD NEWS

for men out to sell the big, expanding ice maker market!

Crystal Tips new "BITS" ice makers are designed to outsell all others!

Thousands of businesses near you need and use flaked ice. Every one of these is a potential sale for you, especially when you are selling the new Crystal Tips "BITS" ice makers. These new ice makers sell faster, easier and *stay sold* for two important reasons:

1. **"BITS" ICE IS BETTER ICE** — the first time you examine "BITS" ice you'll quickly see it is larger, more firm and less watery than ordinary ice "flakes." This means "BITS" ice flows more freely, cools faster and lasts longer!
2. **EXCLUSIVE ICE-CYCLE DESIGN** is more efficient and dependable — this exclusive Crystal Tips design really gives you something to help you sell. It involves not only revolutionary mechanical features but superior refrigeration system design and the use of better materials in the most vital parts of the ice making section.



Low installation cost, low operating cost, minimum service plus higher profits for you are other big reasons why Crystal Tips "BITS" ice makers will help you out-sell competition.

Crystal Tips "BITS" ice makers are perfect sales companions to the famous, fast selling Crystal Tips 2-in-1 ice cube — ice chip makers. With Crystal Tips you have the proper size ice and the properly designed ice maker to produce it efficiently and economically for any establishment. If you want to out-sell ice maker competition find out today about a Crystal Tips distributorship. INQUIRE NOW!

Start selling these wanted ice makers right away. Write or phone us now for complete information.



AMERICAN AUTOMATIC ICE MACHINE COMPANY
1979 Park Avenue • Faribault, Minnesota
Telephone EDison 4-5501

A Division of McQuay, Inc.

Circle No. 10 on Reader Service Card

chandised through distributors and sales offices. Pickett will be located at the firm's home office in Louisville, Ky.

•

Delco Products Div. of General Motors Corp., has announced six new assignments in its sales department. **John D. Hughes,** central zone manager, has been named sales manager, fractional horsepower and hermetic (refrigeration) motors. **Samuel W. Blanton,** Detroit zone manager, becomes sales manager, automotive products. **J. Fred Howe,** north central zone manager, now is sales manager, distributor sales. **Robert O. Dehlendorf,** refrigeration motors product manager, has been named service manager, technical service and advertising. **Edward P. Czapor,** sales engineer, has been appointed manager of marketing and new products planning. **Allan C. Wight,** new products manager, becomes sales manager, Delcomatic door operators.

•

Pittsburgh Corning Corp. has appointed **K. Frank Kennedy** general manager of the firm's Canadian office in Montreal. Kennedy has been associated with Pittsburgh since 1954.

•

All-State Welding Alloys Co. has added two salesmen to cover the air-conditioning and refrigeration industries. **Allen B. Harvey,** a member of the American Society of Refrigeration Engineers with 15 years field experience, and **Tony DeChiara,** formerly sales manager of Drico Industrial Corp., will cover the Eastern Seaboard for All-State. They will work out of company headquarters at White Plains, N. Y.

•

Paul Komroff has been named vice president in charge of air-conditioning engineering for the Consumer Products Div. of Emerson Radio & Phonograph Corp. Komroff has been with Emerson since Quiet-Heet Corp. became its subsidiary and manufactured Quiet Kool air-conditioners for the parent company.

William Gaskell has been appointed central district manager for the American-Standard Air Conditioning Div. In his new position he will be in charge of the division sales activities in an area from Michigan to Eastern Tennessee including upper New York State, and the western half of Pennsylvania. Gaskell joined the division in 1958 as Boston district representative.



•

Trane Co. has appointed **Joe Wharton** to manage its newly established sales office at Lubbock. Wharton has had 10 years experience in the air-conditioning and heating industry.

•

Kent J. Worthen has been appointed national sales manager for General Electric two-way radio. From the company's communication products headquarters in Lynchburg, Va., he will direct the sales activities of 60 district offices throughout the nation and will coordinate the efforts of manufacturer's representatives who sell GE mobile radio equipment. Worthen joined General Electric in 1949.

•

H. C. Siler has been named general sales manager of Utility Appliance Corp. Siler who has been western division sales manager, will supervise all field salesmen. Before joining Utility, he headed his own manufacturing firm. He joined the appliance corporation in 1957.



•

Four new promotions have been announced within the advertising department of York Div., Borg-Warner Corp. Named as sales promotion managers were **Kenneth J. Thompson** and **Henry H. Kirkpatrick, Jr. J. Donald Smith,** formerly manager of advertising and sales promotion for the engineered machinery division, is now advertising manager. The new manager of advertising and sales promotion services is **Caron N. Ehehalt.**

•

Walter Hassenplug has been named executive vice president of Acme Industries, Inc. Hassenplug has been vice president and director of engineering for the firm since 1956. Acme also announced that **Henry R. Krueger,** a project engineer for the past two years, will take over as director of engineering.

•

Two district sales managers have been announced by Iron Fireman Mfg. Co. **William W. Suggs Jr.** has been appointed for the Columbus, Ohio area. Martin J. Wisehart will direct activities in northwest Ohio and five Indiana counties.

•

Gene C. Mix has been appointed sales manager, Western Div., of Torrington Mfg. Co. Mix formerly was owner, with his brother, of Bronson Fan Mfg. Corp.

•

Appointment of **Frank Lydiard** as sales promotion manager for John Wood Co.'s Haverly Equipment Div. has been announced.

•

Berwyn Johnson has joined the research staff of Titus Mfg. Corp. as research engineer in its air distribution research and development laboratory.

•

Alwin B. Newton, director of engineering for the York Div. of Borg-Warner Corp., also has been named a vice president.

•

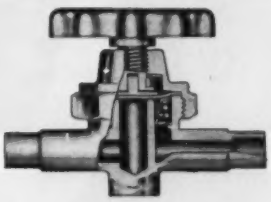
Viking Air Products, announces the appointment of **Walter B. Gerhardt** as dealer salesman for the Chicago area.

HENRY VALVE CO.

CONTROLLING FLOW SINCE 1914

Every product bearing the name Henry carries with it complete assurance of on-the-job satisfaction. This quality of performance and the confidence it inspires have made Henry the most accepted line in the industry.

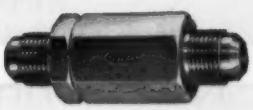
VALVES—Shut-off
Packless, Packed and Wing Cap Types



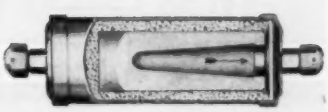
VALVES—Pressure Relief
Piston and Diaphragm Types



VALVES—Flow Check
Spring Loaded and Free Floating Types



FILTER-DRIERS & Driers
Sealed and Cartridge Types



STRAINERS—All Types
Sealed and Cleanable

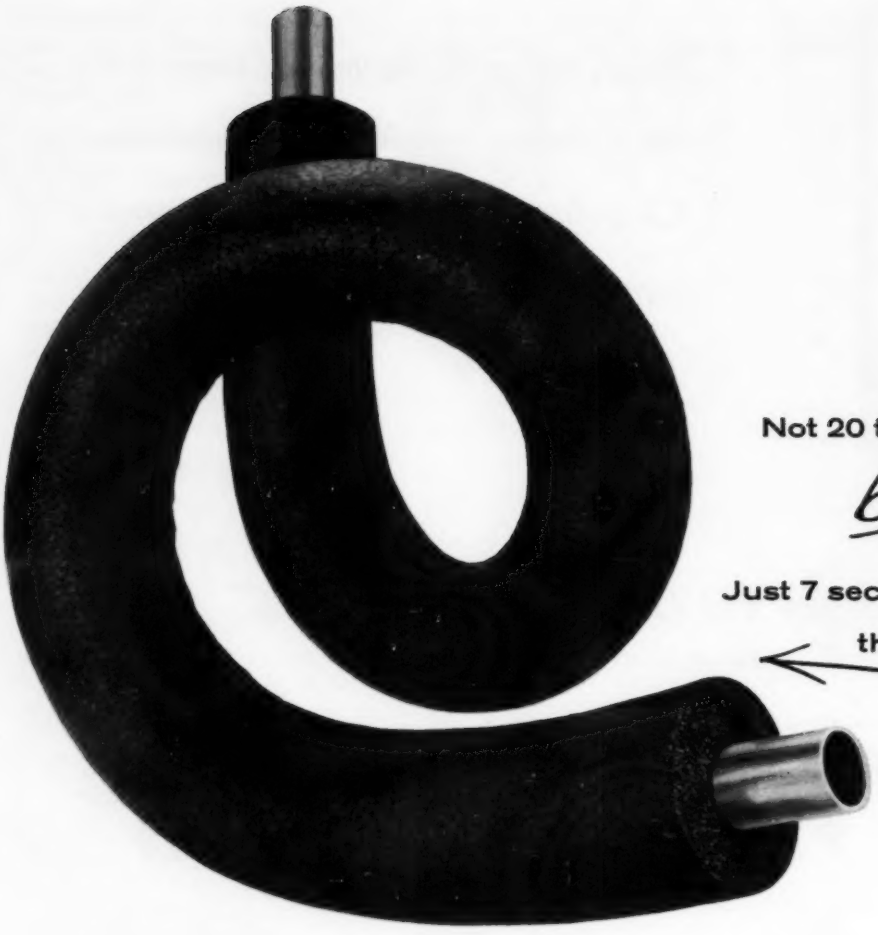


HENRY VALVE COMPANY

For Refrigeration, Air Conditioning and Industrial Applications

MELROSE PARK, ILLINOIS, U.S.A. CABLE: HEVALCO, MELROSE PARK, ILL.

Circle No. 11 on Reader Service Card



New Johns-Manville AEROTUBE insulation

cuts labor costs 50%...and more!

New Aerotube® Insulation entirely eliminates twine wrapping, skirting and other time-consuming methods of insulating lines that sweat!

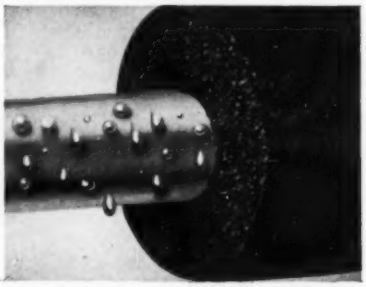
On a straight run of pipe or the most complex bend—Aerotube goes on fast! Just slides on new lines . . . six feet at a time . . . in a matter of seconds! On connected pipe, the job takes but little longer. Just the time it takes to slit Aerotube longitudinally, snap on pipe, and cement.

With all its savings in time, Aerotube gives you better results! Its unique closed-cell structure helps seal against heat transfer . . . gives Aerotube a built-in vapor barrier that retains its integrity indefinitely.

Use Aerotube wherever an effective vapor-sealed insulation is needed—air conditioning run-outs, CO_2 lines, dual temperature systems, on any line (to 200F) where Aerotube's labor savings will repay its slight additional cost many times over!

Send for informative new AEROTUBE brochure, IN-213A. It illustrates methods of fitting AEROTUBE to all types of fittings . . . sweat and screw type joints . . . and connected pipe. Gives best thicknesses for various design conditions, with helpful facts on sizes, packaging data and dimensions. *Write for your free copy now!* Address Johns-Manville, Box 14, N.Y. 16, N.Y. In Canada, Port Credit, Ont.

Flexible new foamed plastic insulation



Aerotube insulation is its own vapor barrier.

JOHNS-MANVILLE

JOHNS-MANVILLE JM PRODUCTS

Circle No. 12 on Reader Service Card



Square D Vertical Action Magnetic Starters Sizes 0, 1, 2, 3, 4 and 5

ONLY SQUARE D GIVES YOU ALL 5

1 *QUICK* INSTALLATION!

No groping or fumbling. Square D gives you lots of wiring space, plenty of knockouts, handy and clearly marked pressure wire connectors.

2 *TOP* PERFORMANCE!

No needless downtime from coil burnout, mechanical binding, contact freezing. Square D gives you an extra-capacity magnet with a tough and cool-operating encapsulated coil to handle additional poles and interlocks—a guided single moving part—big silver cadmium-oxide contacts with strong finger springs—arcing yokes on larger sizes.

3 *REAL* OVERLOAD PROTECTION!

No change in trip characteristics because of mismatched parts supplied separately for field assembly, no distortion of heater in installation. Square D gives you melting alloy unit construction—factory-assembled and individually tested for bull's-eye accuracy. Also bi-metal and magnetic designs for automatic reset or adjustable trip applications.

4 *EASY* INSPECTION and MAINTENANCE!

No starter is "maintenance-free." But Square D makes the job easy. Inspection is a breeze. You don't have to remove wiring for contact replacement or take the starter out of the enclosure to change coils.

5 *WIDE-RANGE* ADAPTABILITY!

No need for excessive inventories to avoid costly waiting for non-standard arrangements. Square D provides "off-the-shelf" kits for changing contacts and coils, adding pushbuttons, selector switches, and up to 4 double-throw auxiliary circuits.

Send for the COMPLETE Story!

Square D Company, Dept. 24,
4041 North Richards Street, Milwaukee 12, Wisconsin

Please send me your new bulletin with detailed proof that Square D offers me my best starter investment.

Name_____

Company_____

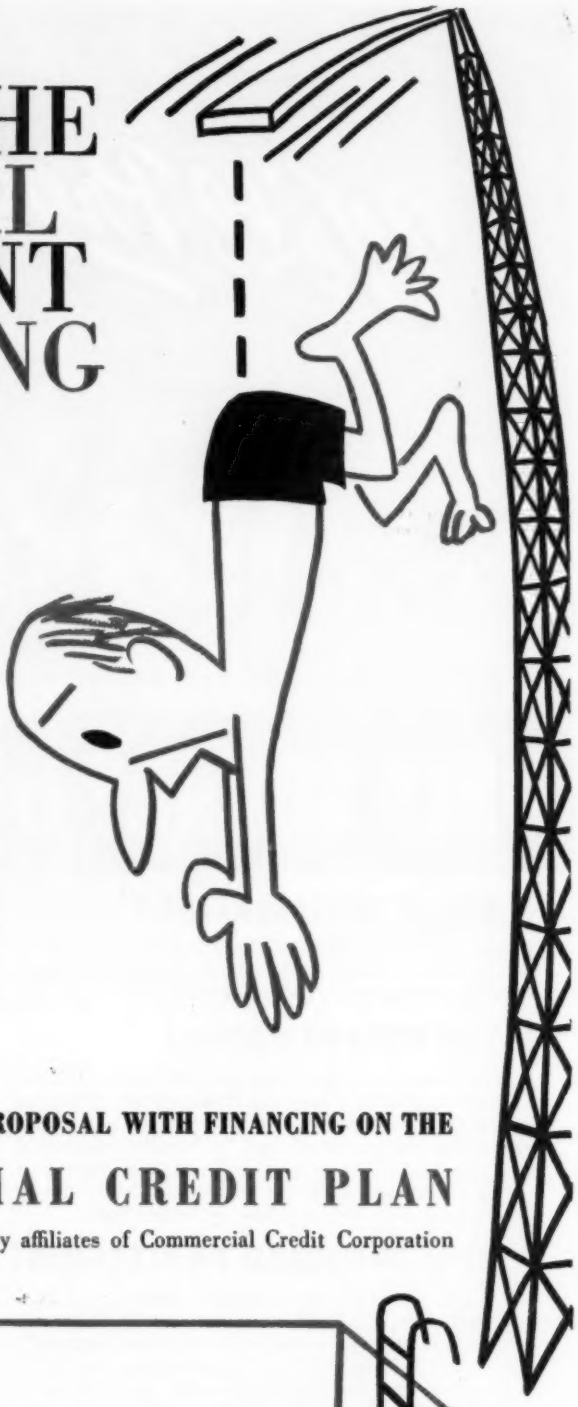
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City_____ Zone____ State_____

SQUARE D COMPANY

Circle No. 13 on Reader Service Card

DON'T OMIT THE ESSENTIAL INGREDIENT IN SELLING



Most of your prospects need their cash reserves and usual lines of credit for current operation. Make it easier for them to sign on the dotted line by including financing arrangements. COMMERCIAL CREDIT's Refrigeration Plan has become an essential part of the proposals of leading commercial refrigeration suppliers.

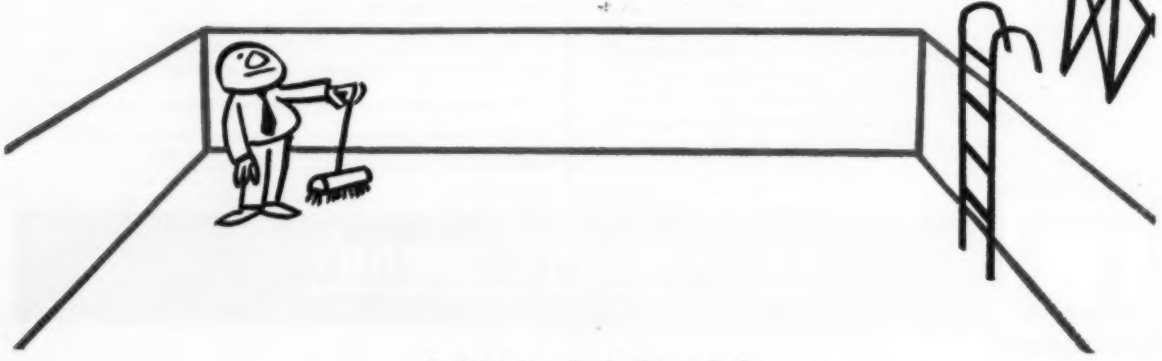
COMMERCIAL CREDIT's Refrigeration Plan is tested by time and experience in handling the financing for thousands of commercial installations. Let us show you how COMMERCIAL CREDIT's experience and know-how can save you time and money . . . help you close sales with less delay. Call the nearest office or write COMMERCIAL CREDIT CORPORATION, 300 St. Paul Place, Baltimore 2, Md.

BUY ON TIME COMMERCIAL CREDIT PLAN

COMPLETE YOUR PROPOSAL WITH FINANCING ON THE

COMMERCIAL CREDIT PLAN

Another service offered by affiliates of Commercial Credit Corporation



Circle No. 16 on Reader Service Card

Dealer-Distributor APPOINTMENTS

Two distributors — one for eastern Ohio and the other for the Oklahoma City, Okla. area — have been appointed by **Amana Refrigeration, Inc.,** to handle its central air-conditioning products.

The Oklahoma City area has been assigned to *Topco, Inc.* Topco officials include John Schultz, president; Mabel Barnson, secretary-treasurer; C. Robert Ingram, chairman of the board; and Al Thomas, service manager.

The Eastern Ohio area, taking in 16 counties, will be serviced by *Ohio Heating & Air Conditioning Co., Cleveland.* The firm is headed by Harson M. Sigofoos, president. Service manager is Glenn Frese.

•

Edwards Engineering Corp. announces the appointment of *Ted Coon, A P Equipment Co.,* St. Louis, Mo., as direct factory representative for eastern Missouri and southern Illinois.

Coon will represent the company's entire line of residential baseboard radiation, packaged hot water residential and commercial boilers, commercial Steel-Fin pipe, motorized zone control valves, and air and water-cooled condensers.

•

A new representative for dual duct air mixing units, **Lewis Reid Co.,** has been appointed in Syracuse by **Buensod-Stacey, Inc.**

•

Milwaukee Stove & Furnace Supply Co., Milwaukee, has been appointed the Wisconsin state distributor of **Bryant Mfg. Co.** Fred Engler manages the Milwaukee firm.

•

Coolerator Div., McGraw-Edison Co., announces the appointments of five new Thomas A. Edison distributors.

They are *Slakey Brothers,* Sacramento, Calif., covering northern California; *Tennessee-Mathes Co.,* Nashville, Tenn., covering eastern Tennessee.

Thermal Supply Co., Houston, Tex., covering southern Texas; *Pioneer Metals Co.,* Miami, Fla., covering the state of Florida; and *Johnson Distributors,* Wichita, Kan., covering mid-Kansas.

•

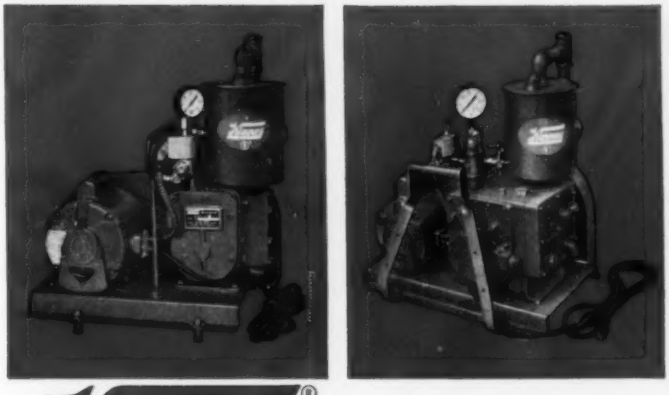
Marlo Coil Co., has appointed **Sterling & Newby** as sales agents for Marlo air-conditioning and heat transfer products in the Dallas area. Sterling & Newby also represents Marlo in Houston. Head of the Dallas office is Ira P. Newby.

•

Charley Lockhart, of Dallas, has been appointed as associate for water chiller equipment in the state of Texas by **Arkla Air Conditioning Corp.**

Lockhart's main job will be the development of Texas distribution and markets for the Arkla-Servel line of 25-ton steam-operated water chillers.

A Cleaner, Drier System, AND Quick, Profitable Service . . .



Kinney® FEATURES TWO NEW PORTABLE HIGH VACUUM PUMPS

KINNEY KC-3R and KC-8R Portable High Vacuum Pumps are proving important money-makers for servicing Freon Refrigeration and Air Conditioning Systems up to 10 ton size. These gas-ballasted KINNEY Pumps leak test, evacuate and dehydrate the system *quickly*. They're built for rugged day-in-and-day-out service and, being portable, are always ready . . . in the shop or out on the job. Get the advantages of these KINNEY Pumps for your service operations — write for prices today.

Write for FREE Catalog Bulletin 4570.1



KINNEY MFG. DIVISION
THE NEW YORK AIR BRAKE COMPANY
3618-JWASHINGTON STREET • BOSTON 30 • MASS

Please send me, without obligation, Bulletin 4570.1 with full information on KC-3R and KC-8R Pumps.

Name_____

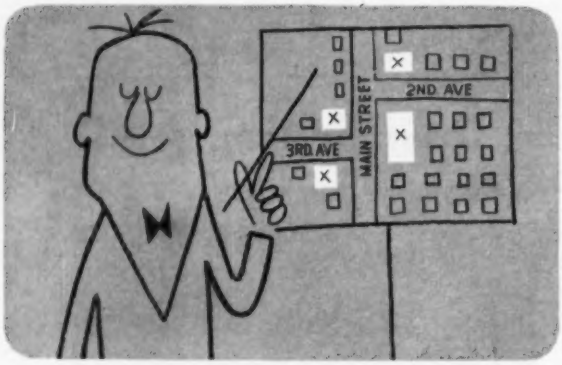
Company_____

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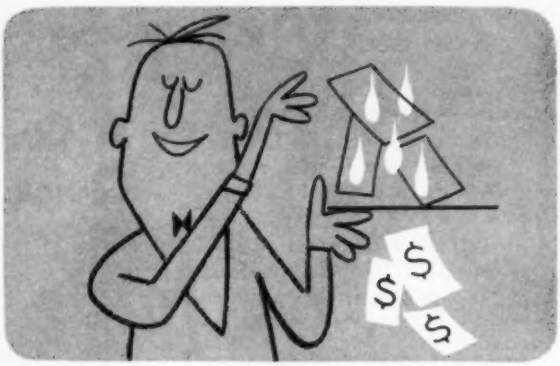
City_____ Zone____ State_____

Circle No. 30 on Reader Service Card

Steady extra profit all year, better service for your customers—with a new kind of water treatment service



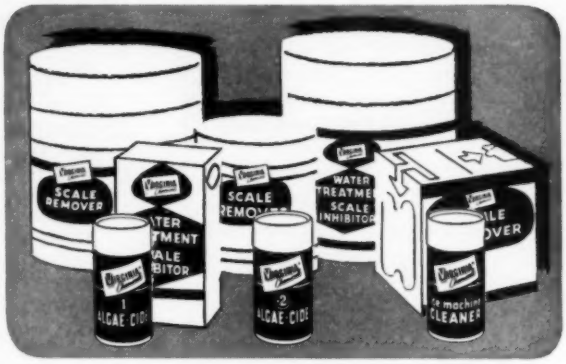
Anyone owning a water-cooled air-conditioning or refrigeration system is a prospect. Many prospects who need this service are right in your own community. Many of your *own* customers need it. Fits in perfectly with the services you now offer. Makes you an all-around expert, brings in extra revenue, establishes you more solidly with your customers.



Let us show you a simple, tested way to sell this valuable, profitable service to old and new customers. This new kind of water treatment service can be handled by your men with virtually no special training, keeps extra profit coming in all year. And your customers will thank you for adding years of service to the life of their equipment.



All "Virginia" Water Treatment Chemicals are easy and safe to use. Solid Scale Remover, for example, is a dry-acid formulation packed in 10 and 50-lb. drums. Just empty into water, stir, and it goes to work at once. Perfectly safe for use on galvanized, dipped zinc and aluminum equipment. No danger of breaking heavy glass bottles—no acid solution damaging floors. Simple and quick—anybody can use it.



Water treatment is reliable and efficient with "Virginia" chemicals—Solid and Liquid Scale Remover, Water Treatment Scale and Corrosion Inhibitor, Algae-Cides #1 and #2, and Ice Machine Cleaner. Free technical help is also available from "Virginia." Write for free folder, "How to Turn Water into Money"—Refrigeration Division, VIRGINIA SMELTING Co., 231 Jefferson St., West Norfolk, Va.

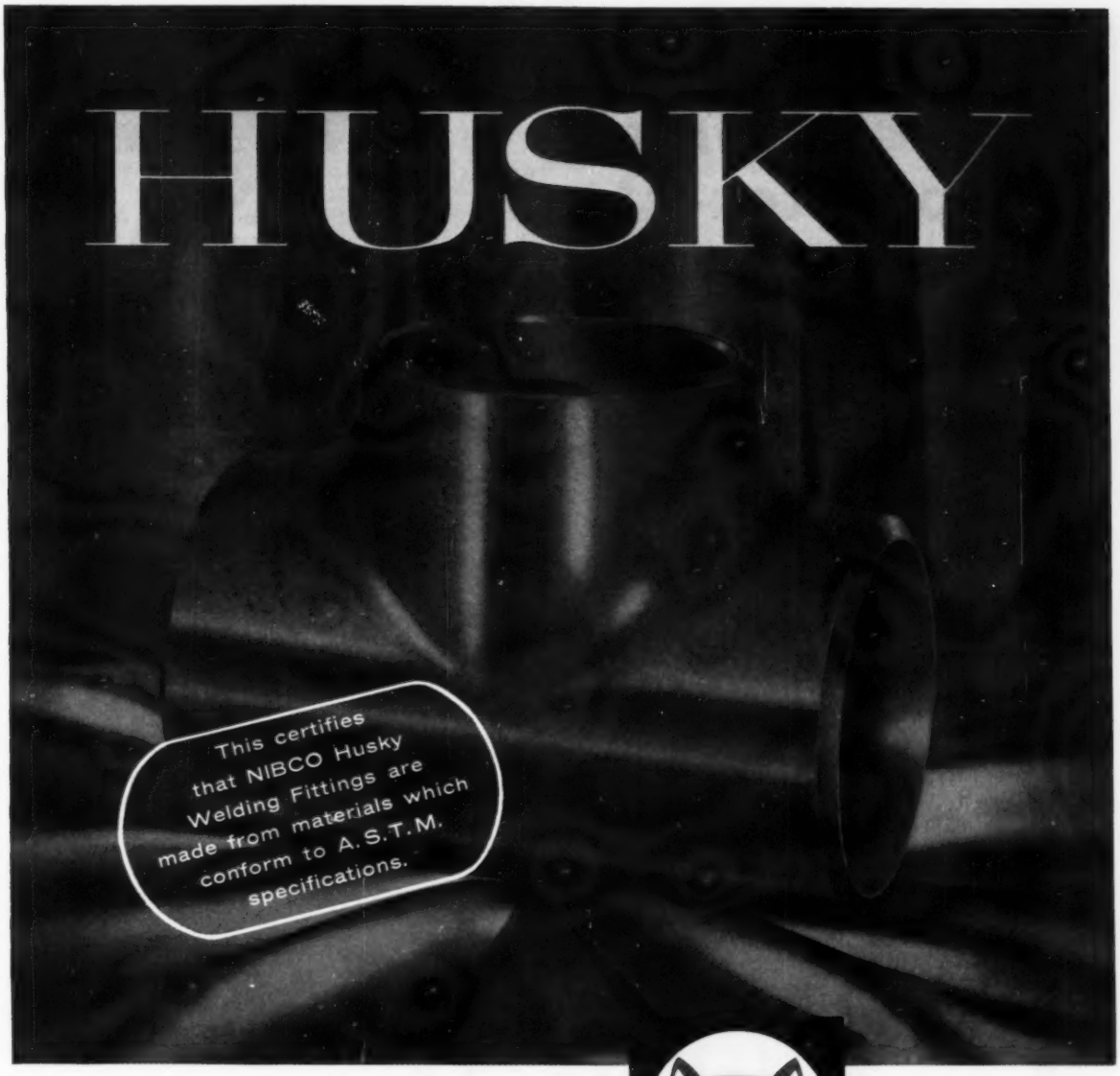
ESOTOO • V-METH-L • CAN-O-GAS • VASCOCEL • PERMAGUM • PRESSTITE TAPE • SUNISO REFRIGERATION OILS
WATER TREATMENT CHEMICALS • NATIONAL SALES AGENT & REPACKER FOR DU PONT'S "FREON" REFRIGERANTS

VIRGINIA® Chemicals

Available in Canada and many other countries

Circle No. 17 on Reader Service Card

HUSKY



Husky fittings conform in all respects to the following high standards set forth by the American Society For Testing Materials: A 234-58T.

- ✓ PROCESS AND MATERIAL
- ✓ MANUFACTURE
- ✓ CHEMICAL COMPOSITION
- ✓ HEAT TREATMENT
- ✓ TENSILE PROPERTIES
- ✓ HARDNESS
- ✓ WORKMANSHIP AND FINISH
- ✓ MARKING
- ✓ INSPECTION

Learn why Husky fittings are "7 Ways Better" ... send coupon.



HUSKY
WELDING FITTINGS



SEND FOR CATALOG OF HUSKY STEEL WELDING FITTINGS

NIBCO INC., DEPT. 1521 Elkhart, Indiana

Please send your new Husky Catalog H-1 without cost or obligation.

name

firm

address

city, state

☐ Please also send address of nearest supplier.

Circle No. 18 on Reader Service Card

first aid for all capacitor-start motors



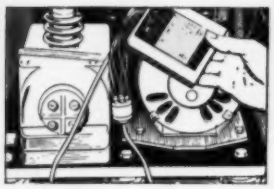
FIND IT FAST...

with the Aerovox Model 85 Motor-Starting Capacitor Selector. Your customers demand **fast** service... especially when there's perishable food at stake. The Capacitor Selector helps you to select the proper capacitor fast when the defective unit is unidentifiable. The unit provides progressive capacity choices from 17.5 to 152.5 mfd.



FIX IT FAST...

with a Model 86 Aerovox Emergency Capacitor. Once you've determined the value of the faulty start capacitor it's a simple matter to take an Emergency Capacitor and make up the required capacity to get the motor running again.



Emergency unit simply clips in position in place of faulty capacitor. Replace emergency unit when time permits with an exact-duplicate Aerovox motor-start capacitor.

Both the Capacitor Selector and Emergency Capacitor are available from your local Aerovox Distributor who stocks and sells a complete line of exact-duplicate motor-start and motor-run capacitor to meet all your replacement needs. See your local Distributor today for your free copy of the new Aerovox AC Capacitor Catalog and Wall Charts.

AEROVOX CORPORATION

DISTRIBUTOR DIVISION

NEW BEDFORD • MASSACHUSETTS

Circle No. 19 on Reader Service Card

as we see it...

by Jim McCallum

American business firms lost more than $1.5 billion last year through fraud, according to a report in the *Wall Street Journal*. This was more than twice the amount of fire losses suffered.

The report further revealed that 74% of total fraud losses take place in disbursement operations, 12% in diversions of inventories, and only 14% in cash receipts.

All this serves to further point up the importance of the article featured in the June issue of THE REFRIGERATION & AIR-CONDITIONING BUSINESS. This article, "9 Ways To Keep Your Employees Honest", was written specially for us by George C. Webster, the business management consultant who authored the "You're the Boss" series that we published last year.

If you happened to miss this article, or if you were just too busy to get around to reading it, it will be worth your while to dig up your copy of our June issue and give a look. Webster points out several simple and specific ways in which you can control fraud and theft in your own business.

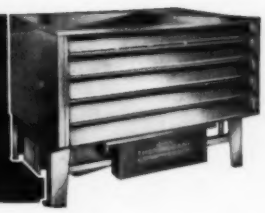
* * *

Looking for a good way to publicize your product, and to get people in the trade used to using it? Try supplying it as demonstration equipment — either free or at reduced cost — to schools teaching refrigeration and air-conditioning.

A number of manufacturers have found this a very worthwhile promotional effort.

For instance, accredited trade schools now can get free "Scotsman" ice machines for use in their service training programs. Distributors select the schools in their areas that they think should receive these demonstration units. Factory approval is based largely on a questionnaire filled out by the school and the distributor. A complete set of service manuals

THROW YOUR COMPRESSOR *OUT!



*OUTSIDE, THAT IS!

KRAMER'S outdoor compressor is the *only* compressor designed to operate *outdoors* for *any* application under *all* temperatures and weather conditions.

Completely assembled, wired, tested and factory run-in, it arrives on the job ready to operate. Simple hookup eliminates costly installation and control adjustment time. Kramer's outdoor compressor ends waste of valuable indoor space.

WRITE FOR BULLETIN

KRAMER

OUTDOOR COMPRESSOR

KRAMER TRENTON CO. • Trenton 5, N. J.

46 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

Circle No. 20 on Reader Service Card

NOW

an entirely new concept in water cooler design!



Completely self-contained, refrigerated electric wall fountain. Capacity: 13 g. p. h.

TEMPRITE

... the "quality line" presents

WALL-TEMP

Model WT-13

With completely new functional beauty and great new flexibility—wall mounted model WT-13, by Temprite, presents an entirely new concept in the design engineering of drinking water coolers. Designed for maximum architectural efficiency wherever self-contained coolers are specified—Model WT-13 is in complete harmony with today's building trends.



1 Mounts flush to wall.
2 Fully concealed plumbing.
3 Ample head room.
4 Floor cleanliness; foot freedom.
5 Extra deep basin.
6 Mounts at child's height if desired.

TEMPRITE PRODUCTS CORPORATION
P.O. Box 72-L, E. Maple Rd., Birmingham, Mich.

Send me literature on the new Temprite "WALL-TEMP" Model WT-13 self-contained water-coolers.

Company_____

Name_____

Address_____

City_____ Zone____ State_____

Circle No. 21 on Reader Service Card

and training aids is supplied with each unit for classroom work. Scotsman also is making available factory and distributor personnel to aid in training faculty members as well as students.

Arkla Air Conditioning Corp. is another firm that is capitalizing on this promotional opportunity. This company is making its all-year gas air-conditioning units available to engineering colleges and universities which want to use them for instructing students in the theory and practical operation of such units. This program permits local gas utilities to cooperate with Arkla in supplying the units at little or no cost.

* * *

Contractors can cure headaches. At least that's what Dow Chemical Co. claims. Dow has recently put cylinders containing twelve aspirins into the hands of its distributors. On the side of each vial is printed the story that there will be no headaches when you have Styrofoam low temperature insulation installed by an approved insulation contractor.

The idea was suggested to Dow by John Bonitz, Bonitz Insulation Co., Inc., Greensboro, N.C.

The aspirins inside are the real thing, and the dosage is printed on the container — just in case.

* * *

Air-conditioned worms?

Yup! On a Georgia bait farm. The U.S. Worm and Minnow Hatchery has discovered that cool worms grow faster, reproduce quicker, dangle livelier. And they should know, for they produce more than 2 million wrigglers annually in their worm barn.

With cooling, it takes only 21 days to ready a worm for the hook — just half the normal time. Without cooling, hot worms shrivel and droop. Temperature and humidity conditions are important in worm breeding. If too hot, too cold, too damp, too dry, the temperamental crawlers disappear. Where to, no one knows.

So air-conditioning has proved to be the answer.

No longer poor worm.

G-B DUCT DISTRIBUTORS

(See ad on facing page)

AKRON, Ohio, The Asbestos Supply Co.
ALBANY, Ga., Industry Insulation Co.
ALBANY, N. Y., Hudson Valley Asbestos Corp.
ALBUQUERQUE, Mt. States Insulation Co.
AMARILLO, Morrison Supply Co.
ATLANTA, Ga., Reynolds Aluminum Supply Co.
The Thompson Company
AUGUSTA, Ga., Noland Company
BALTIMORE, Md., Leroy Insulation Company
BEAUMONT, Tex., Solar Supply Company
BILLINGS, Mont., Big Horn Supply, Inc.
BIRMINGHAM, Ala., Hall-Newsome Co.
Hart-Greer, Inc.
Shook & Fletcher Supply Co.
Reynolds Aluminum Supply Co.
BOSTON, Mass., Homans-Kohler, Inc.
BUFFALO, Industrial Insulation Sales, Inc.
North Star Supply Company
CHARLESTON, W. Va., Dunbar Metal & Sup. Co., Inc.
CHATTANOOGA, Noland Co.
CHICAGO, E. C. Carlson Company
Culberg Asbestos & Cork Co.
CLEVELAND, Ohio Asbestos & Ins. Co.
COLUMBUS, Santeler Brothers
Culberg of Ohio
CORPUS CHRISTI, Precision Insulation Co.
DALLAS, Insulation Supply Co.
Payne-Ladewig, Inc.
DAVENPORT, Iowa, Republic Electric Co.
DECATUR, Ga., Lennox Industries
DENVER, Gene Wright Lumber Co.
DES MOINES, Iowa Asbestos Company, Inc.
DETROIT, G. L. Johnston Co.
ENGLEWOOD, N. J., Englewood Supply Co.
EVANSVILLE, Ind., George Koch Sons, Inc.
FT. WAYNE, Ind., M. H. Hilt, Inc.
FT. WORTH, Bracken Co.
GULFPORT, Miss., Paine Supply Co.
HOUSTON, Precision Insulation Co.
INDIANAPOLIS, Central Supply Co.
JACKSON, Miss., Paine Refrigeration & Supply Co.
JACKSONVILLE, Eckles Distributors, Inc.
Ferber Sheet Metal Works
Florida Air Conditioners
Reynolds Aluminum Supply Co.
Southernair Distributors
KANSAS CITY, Mo., Central Supply Co.
Superior Distributing Corp.
KEWANEE, Ill., Mechanical Insulation Co.
KNOXVILLE, Tenn., Holston Air Conditioning Corp.
LAKE CHARLES, La., Solar Supply Company
LAREDO, Tex., Anderson-Sturgis Company
LITTLE ROCK, Gunn Distributing Co.
555, Inc.
LOS ANGELES, Western Fibrous Glass Products Co.
LOUISVILLE, General Insulation & Roofing Co.
LUBBOCK, Tex., Morrison Supply Co.
MACON, Ga., Industry Insulation Co.
MEMPHIS, A. T. Distributors, Inc.
Gibbons Supply Co.
MIAMI, Crabtree Insulation Co.
Fiber Duct Dist.
Reynolds Aluminum Supply Co.
MILWAUKEE, F. R. Dengel Co.
MINNEAPOLIS, Asbestos Products, Inc.
MYRTLE BEACH, S. C., Air Conditioning Supply
NASHVILLE, Central Air Conditioning & Heating Co.
Reynolds Aluminum Supply Co.
NEWARK, N. J., Eastern Steam Specialty Co.
NEW ORLEANS, Eagle Asbestos & Packing Co.
Solar Supply Co.
NEW YORK, Eastern Steam Specialty Co.
NORFOLK, Va., Automatic Equipment Sales Co.
OKLAHOMA CITY, Ball Dist. & Engineering Co.
OMAHA, Cardinal Supply & Mfg. Co.
ODESSA, Tex., Morrison Supply Co.
Western Chemical & Supply, Inc.
ORANGE, Conn., Insulation Supply Co.
PASSAIC, N. J., Ral Supply Co.
PHILADELPHIA, John F. Scanlan, Inc.
PHOENIX, Kircher Asbestos & Rubber Co.
PITTSBURGH, Dravo Corp.
RALEIGH, N. C., Reynolds Aluminum Supply Co.
RICHMOND, Va., Automatic Equip. Sales Co., Inc.
Reynolds Aluminum Supply Co.
ROCHESTER, N. Y., Rochester Oil Burner Company
ROCKFORD, Ill., Mott Brothers Co.
SALT LAKE CITY, Bullough Asbestos Supply Co.
SAN ANTONIO, The Bracken Company
SAN DIEGO, Western Fibrous Glass Products Co.
SAN FRANCISCO, Western Fibrous Glass Products Co.
SAVANNAH, Ga., Reynolds Aluminum Supply Co.
SEATTLE, Western Fibrous Glass Products
SHREVEPORT, La., Frith Sales Co.
SOUTH BEND, Place & Co.
ST. LOUIS, Hollander & Co., Inc.
ST. PAUL, Minn., Asbestos Products, Inc.
SULLIVAN, Ill., Lewie David, Inc.
SYRACUSE, N. Y., Burnett Process, Inc.
TALLAHASSEE, Baker's, Inc.
TAMPA, Eagle Roofing & Art Metal Works, Inc.
TULSA, Okla., Ball Distributing & Engr. Co.
VANCOUVER, B. C., Fleck Brothers Limited
WASHINGTON, D. C., Walter E. Campbell Co.
WINSTON-SALEM, N. C., Air Conditioning Supply

GUSTIN gb BACON

THIS
$75,000 CALIFORNIA HOME
CALLED FOR A DUCT SYSTEM
OF THE HIGHEST

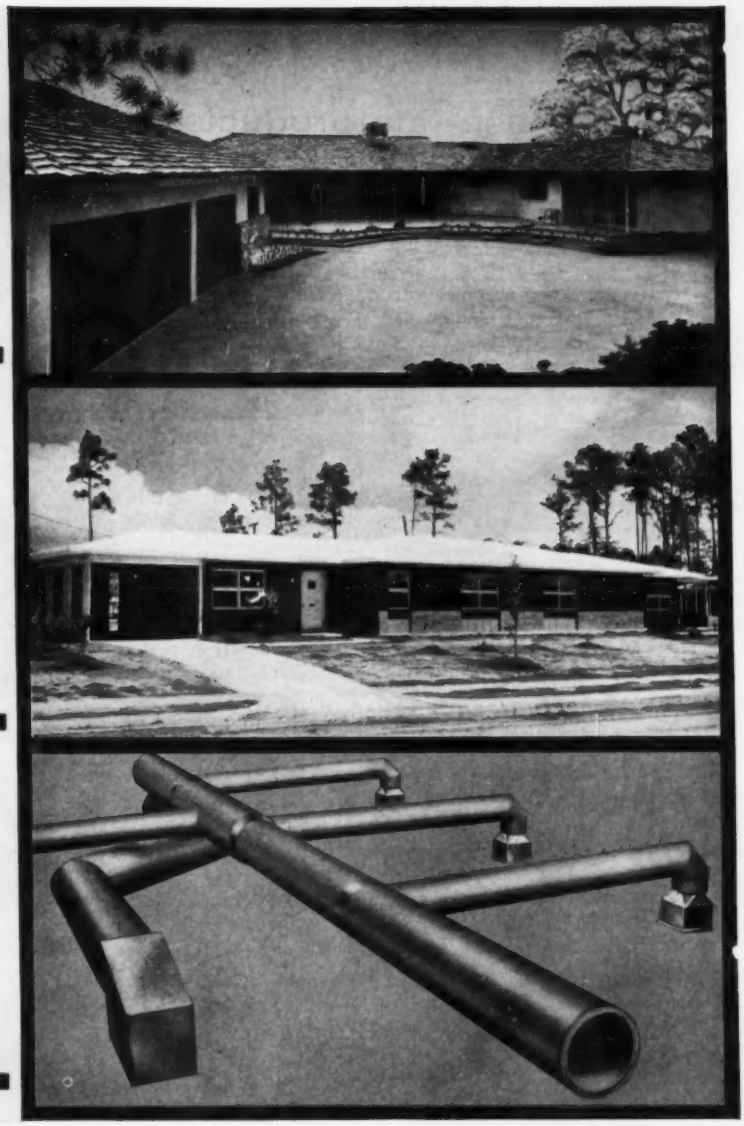
quality..

AND IN THIS
800-UNIT CAPEHART HOUSING
PROJECT, EMPHASIS WAS ON

economy..

IN BOTH CASES
CONTRACTORS INSTALLED

G-B Duct..



If you're interested in satisfying both price- and quality-conscious customers, next time specify G-B Duct—the first and only prefabricated round glass fiber duct tested and labeled by Underwriters' Laboratories as an air conditioning and heating duct.

With G-B Duct you get quality performance because the uniformly thick glass fiber walls provide thermal insulation and maximum sound absorption. Also, the continuous airtight plastic vapor barrier sleeve positively prevents condensation.

And installing G-B Duct is economical, too, because with G-B Duct you get a neater, better job—faster. G-B Duct comes in one-piece 6' sections, ready to use—no preassembly, no folding. It's easy to cut and fit with a knife and the templates are provided. Sizing is no problem because G-B Duct is made in the same nominal sizes as round sheet metal pipe and fittings.

FOR NAME OF YOUR NEAREST SUPPLIER, SEE ADJOINING COLUMN

GUSTIN-BACON *Manufacturing Company* GUSTIN gb BACON

228 W. 10th St., Kansas City, Mo.

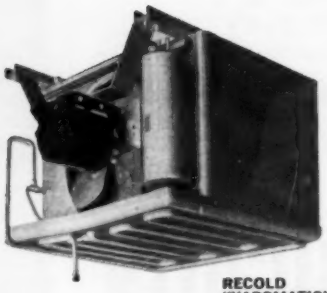
Thermal and acoustical glass fiber insulations • Molded glass fiber pipe insulation • Couplings and fittings for plain and grooved end pipe

Circle No. 22 on Reader Service Card

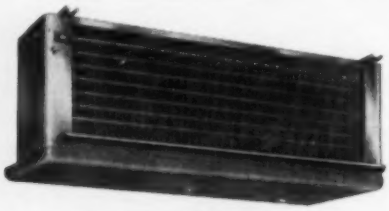
These fine products made by

RECOLD

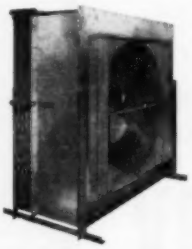
When it comes to commercial or industrial air conditioning and refrigeration there's a highly specialized and highly efficient item of RECOLD equipment that does a specific job specifically well.



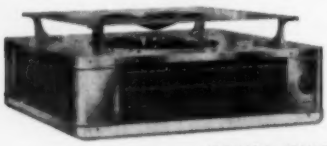
RECOLD "VAPOMATIC" COILS
An Engineering milestone. Instantaneous, automatic, vapor defrosting.



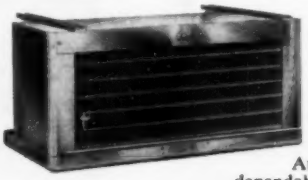
RECOLD "HUMID AIR" COILS
Make no mistake—there is no substitute for quality.



RECOLD "DRICON" CONDENSERS
Air-Cooled Condensers with slow-speed, belt-driven fans. Exclusive "balanced" circuiting.



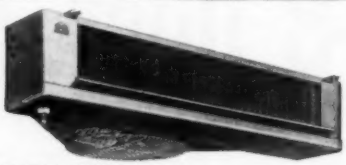
RECOLD "SUPREME" COILS
"Perfect Circle" distribution of low-velocity, high-humidity air.



RECOLD "WATER DEFROST" COILS
Automatic—rugged—dependable. Your workhorse for the industrial low-temperature application.



RECOLD "DRI-FAN" CONDENSERS
With the *exclusive*, patented "Bleed Funnel." *Complete* accessibility can be found only in this condenser that revolutionized the industry. Available thru 250 tons.



RECOLD "DELTA" COILS
Whether it's a corner, backwall or sidewall installation, "You can do it with Delta."

RECOLD "FLOOR UNITS"
Twelve models, seven cabinet sizes, twelve arrangements to meet your *specific* need.



RECOLD

CORPORATION

7250 East Slauson Avenue, Los Angeles 22, California

Circle No. 23 on Reader Service Card

Joe Siegel says:*

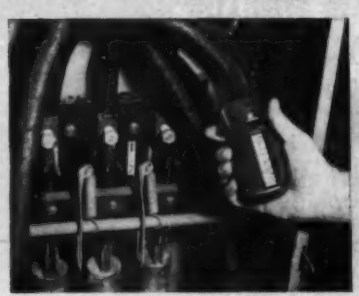
"I SAVE TWO HOURS A DAY WITH MY AMPROBE RS-3!"

"Just the other day I was asked, 'which is the most important tool a refrigeration and air-conditioning serviceman can carry?' My vote goes to the AMPROBE RS-3 snap-around *volt-ammeter-ohmmeter*. I've carried the RS-3 for a year now; it saves me effort, trouble and an average of 30 minutes on every call I make. I don't see how I ever did without it!"

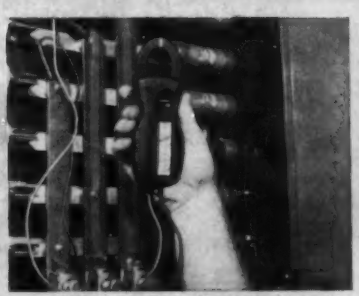
Joe isn't the only one who raves about the RS-3. Thousands of servicemen around the country have discovered that the all-purpose AMPROBE RS-3 handles 99% of all their test needs. It meets every service requirement, has three voltage ranges... 0-150/300/600 VAC; five current ranges from 0 to 300 amps; 0-500 Ω ohmmeter ranges give readings as low as 0.5 ohms. *Learn how you can make more service calls – mail coupon today.*

*Veteran serviceman, Ditmas Refrigeration Co., Inc., Brooklyn, N. Y.





Check phase balance on new installations



Check for low-voltage conditions



Check unmarked terminals on motors

AMPROBE RS-3

Pyramid Instrument Corp. Dept. R-3
630 Merrick Road, Lynbrook, L. I., N. Y.

I'd like to know more about how Joe uses the AMPROBE RS-3. Please send me detailed story.

Name _____

Address _____

City _____ Zone _____ State _____

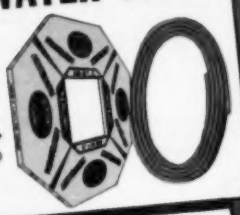
Circle No. 24 on Reader Service Card

IN TUBING, Nothing Beats Copper! IN COPPER TUBING, Nothing Beats READING!

For COPPER WATER TUBE

Specify

READING "LEKTRONEAL"®



For COPPER REFRIGERATION TUBE

Specify

READING "LEKTROSEAL"®



Also Specify READING

for
- COMMERCIAL COPPER TUBE
- RED BRASS & COPPER PIPE
- THREADLESS COPPER PIPE

For FINNED COPPER TUBE

Specify **READI-FIN®**

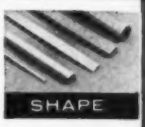
A line of heat transfer tubing made by Readi-Fin Mfg. Co., Inc. (a subsidiary of Reading Tube Corp., at Reading, Pa.). The extended surface is extruded from the tube wall, thus eliminating the possibility of fin failures resulting from thermal shock, corrosion and erosion. This "one-piece" (integral) construction provides maximum heat transfer efficiency, ruggedness, easy fabrication and freedom from fouling. It's available in Water Tube types with finned or plain ends and in Condenser Tube types with finned, plain or stripped ends.



For PRECISION COPPER TUBE

Specify **MACKENZIE WALTON**

(A Subsidiary of READING TUBE CORP.)
PAWTUCKET, R. I.





- Famous for Accurate and Fine Finish Tubing
- Quality Controlled from Start to Finish



READING TUBE CORPORATION

Empire State Building, New York 1, N. Y., Plant: Reading, Pa.

Distribution Depots:

READING, PA.	**WOODSIDE, L. I., N.Y.** 57-17 Northern Blvd.	**PHILADELPHIA, PA.** 921 Penn St.	**CHICAGO, ILL.** 305 W. 31st St.	**CLEVELAND, OHIO** 4615 Perkins Ave.
ATLANTA, GA. 690 Murphy Ave. S.W., Unit 5, Bldg. B	**OAKLAND, CALIF.** 410 Hegenberger Rd.	**LOS ANGELES, CALIF.** 120 No. Santa Fe Ave.	**DENVER, COLO.** 2845 Walnut St.	**HOUSTON, TEXAS** 1121 Rothwell St.

DALLAS, TEXAS—9000 Sovereign Row, Brook Hollow Industrial District

Circle No. 25 on Reader Service Card

News IN REVIEW...

A deferred payment plan for dealers-distributors carrying the Mathes' line of air-conditioners and heat pumps has been announced. Called GAAP (Glen Alden Acceptance Plan), the program is being made available to new and existing dealers upon application. Benjamin R. Ebersman, president, said that the plan has been designed to solve the problem of dealers who, though well-managed, do not have sufficient operating capital to fully make the most of the accelerating pace of seasonal sales. The amount of credit, and length of deferred payment will vary with the needs of the dealer and the degree to which his requests are felt to be in line with good business practices.

Gross sales reached a new high for McQuay, Inc., for the first six months of 1959. Sales reached $9,042,000 as compared with $8,010,000 in the first half of 1958 . . . Trane Co. reports sales and profits down for the first six months of 1959 compared with 1958. Consolidated sales were $38,021,685 as compared with $40,163,154 for the first half of 1958.

A Danish court has handed down a decision in favor of the European representatives of Evis Mfg. Co. in a suit brought by this firm against two civil engineers who published an article terming the Evis water conditioners "a gross swindle" and claiming that Evis ads "exploited [the products] in a coarse and irresponsible way." The decision stated that these remarks were false and without any aubstantiation. In this country, the Evis protest against an adverse FTC ruling is being reviewed by the U.S. Court of Appeals.

Proposed reorganization of Air-Conditioning & Refrigeration Institute will be voted upon at the fall membership meeting scheduled to be held at Chalfonte-Haddon Hall hotel, Atlantic City, on November 1. This is the day before the opening of the 11th Exposition of the Air-Conditioning and Refrigeration Industry at Atlantic City's Exposition Hall.

COMPANIES EXPAND FACILITIES: Drayer-Hanson has started construction of a 1500-sq.ft. office building adjacent to its existing plant and office building. The structure is to be completed in three months . . . A copper and brass tube mill modernization program has been started by Lewin-Mathes Co. Div., Cerro de Pasco Corp. Completion of the overall program will take approximately two years . . . Southwest Mfg. Co. has purchased several acres adjoining their plant in Aurora, Mo. The two buildings included in the acquisition have been modernized and will be used as warehouse space.

Wheel Trueing Tool Co. has added a full line of masonry, concrete and stone saws and blades to its line of masonry drilling equipment. Products will bear the "Truco" trade name, and marketing will be under the direction of Karl J. Klapka, chief engineer and sales manager for the masonry drilling division.

News IN REVIEW...

Now in full production is the new 40,000-sq.ft. Tyler Refrigeration Corp. plant in Schwelm, Westfalen, West Germany. The German operation is a wholly-owned subsidiary of Tyler Refrigeration International, and is manufacturing the full line of open self-service sales cases. . . . A new British company, Carlyle Air Conditioning and Refrigeration Ltd., has been formed by Carrier International Ltd., and Stone-Platt Industries Ltd. of Great Britain. The company will engage in the air-conditioning and refrigeration business.

Gibson Refrigerator Co. has purchased the air-conditioner coil manufacturing equipment of O. A. Sutton Corp. The equipment, used in the production of air-conditioner evaporators and condensers, will be moved from the Sutton plant in Wichita, Kan., to Greenville, Mich. . . . New board chairman of National Industrial Advertisers Association is Harold A. Harty, advertising and sales promotion manager for Wolverine Tube.

Copper & Brass Research Association has released a study which spells out the impact of U.S. international economic policies on U.S. brass mills. The study includes an analysis of U.S. international trade in brass mill products, and a plea for a flexible tariff which would permit the brass mills to compete on even terms with foreign suppliers in U.S. markets.

General purpose seamless aluminum tube now is available from a number of Chase Brass & Copper Co. warehouses. Produced in many diameters and wall thicknesses, the tube has many uses in heating, air-conditioning, and refrigeration. Presently available packed ten 50' coils to the carton. Recommendations for specific applications will be made by Chase specialists upon request.

A patent infringement dispute between Hupp Corp., and General Electric Co., over appliance and air-conditioning product patents has been settled. Terms of the settlement provide Hupp with a royalty-free license to use 16 GE patents, plus a cash consideration, in exchange for which GE is granted a non-exclusive, paid-up license to use a Hupp patent for fractional horsepower compressors used in refrigeration and air-conditioning products.

24 renewal parts depots have been established by York Div., Borg-Warner Corp. to replace the former York district and branch warehouses which have been discontinued. Each depot is an independent company, functioning as a wholesaler to serve customers of York's engineered machinery equipment.

TODAY...

almost everyone plays it SAFE with

SPORLAN *Catch-Alls*

. . . the Perfect Filter-Drier



because

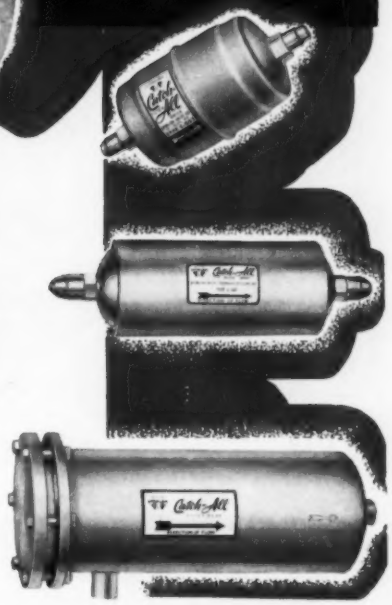
they know the INSIDE STORY

The famous Sporlan molded porous Catch-All core is a blend of highly efficient desiccants that now offers EVEN GREATER drying capacity. It is activated after assembly to the highest degree of dryness, then immediately sealed against any loss of activation before installation with moisture and tamper-proof seals.

The Catch-All dries the refrigerant down to such an extremely low end point that any remaining moisture is absolutely harmless!

It cannot powder or pack . . . the refrigerant cannot by-pass or channel around it. As a matter of fact, the famous Sporlan molded porous core Catch-All offers the only true filtering device capable of filtering out foreign matter with negligible pressure drop.

Harmful corrosive acids are adsorbed and retained within the core itself.



You, too can play it safe *and get perfectly clean, perfectly dry refrigeration systems . . . buy Sporlan Catch-Alls, the perfect filter-driers with the famous molded porous cores that now give even greater drying capacity.*

Buy Sporlan *See-Alls*, too . . .



the amazing new moisture and liquid indicator that takes the guess-work and worry out of every installation.

See your Sporlan Wholesaler today!

SPORLAN VALVE COMPANY

7525 SUSSEX AVE. ST. LOUIS 17, MO.

EXPORT DEPT. 85 BROAD STREET, NEW YORK 4, N. Y.

Our 25th Anniversary...1934-1959

Circle No. 26 on Reader Service Card

SAVE UP TO 25%!

and in addition get the simplest and most efficient **automatic hot gas defrosting**

McQuay THERMEX® SYSTEM



(Patent applied for)

McQuay Means Quality

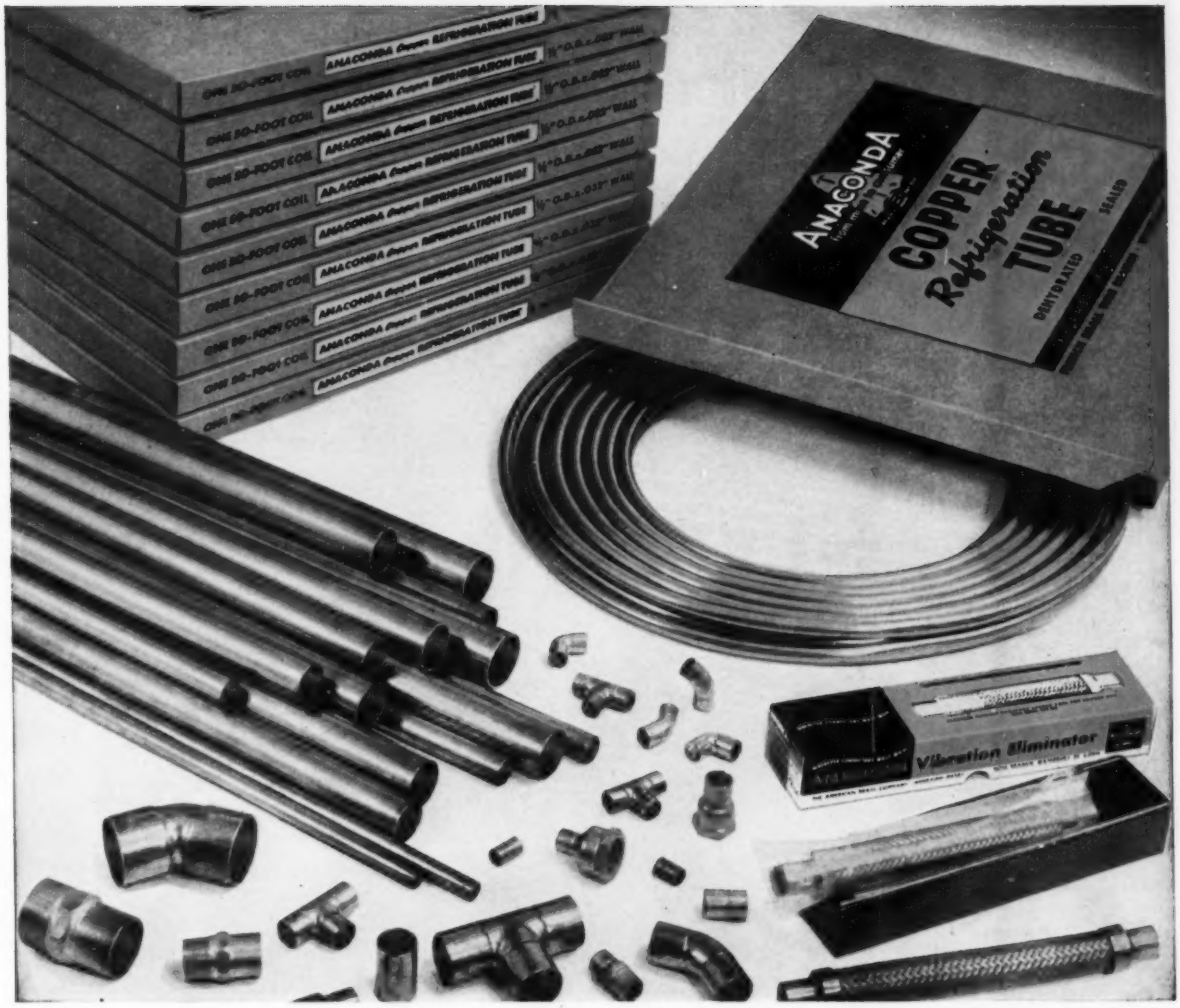
The McQuay Thermex® hot gas thermal exchanger defrosting system is the simplest available today, yet you save up to 25% on initial costs. You get extra-rapid defrosting due to the Thermex® accumulator, which also affords protection to the compressor by keeping raw liquid from the compressor until it is vaporized. The McQuay Thermex® system is fully automatic, and the number of defrost cycles can be adjusted to meet any requirement. Before you select any hot gas defrost system, investigate the McQuay Thermex® system. Eight sizes are available, from 3,000 to 32,000 Btu/hr at 10° T. D. See your McQuay wholesaler, or write McQuay, Inc., 1643 Broadway Street N.E., Minneapolis 13, Minnesota.



McQuay INC.

AIR CONDITIONING • HEATING • REFRIGERATION

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BE SURE—ask for Anaconda by name

Be sure your job can stand up in service. ANACONDA Refrigeration Tube is 99.9% pure copper, phosphorus deoxidized—clean and dry—made to meet ASTM Specification B280-55T.

Be sure you can make a fast, easy installation. ANACONDA Refrigeration Tube is consistently uniform in gage, size, and temper. ANACONDA Fittings, Vibration Eliminators, and Tube are built to match.

Be sure you get all these extra values — to protect your reputation and your profits, ask for Anaconda refrigeration products by name.

SEE YOUR ANACONDA DISTRIBUTOR

ANACONDA®
REFRIGERATION PRODUCTS

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LOW-COST, EASY TO INSTALL, EASY TO SERVICE LINE

by Tenney

for Back Bars, Reach-Ins,
Direct-Draw Bars,
Under-Counters, Low Boys



TENNEY all-new,

all-aluminum mx unit coolers

- RUSTPROOF, LIGHTWEIGHT ALUMINUM CASE
- COIL CONSTRUCTION completely non-ferrous
- MINIMUM PRESSURE DROP CIRCUITING, conservative ratings
- AMPLE ROOM FOR TX VALVE
- EASY TO INSTALL, keyhole slotted hangers on unit
- FACTORY ASSEMBLED unit hangers, drain fittings
- 2-WAY MOUNTING standard factory equipment on MX-9 through 17
- QUIET, EFFICIENT fan and motor combinations
- LIFE LUBRICATED standard motors; easily replaced in field

Write for Bulletin 118-58

Engineers and Manufacturers
of Refrigeration and
Environmental Equipment

Tenney
ENGINEERING, INC.

1090 SPRINGFIELD ROAD, UNION, NEW JERSEY • PLANTS: UNION, NEW JERSEY AND BALTIMORE, MARYLAND

Circle No. 39 on Reader Service Card

Letters

Tests for Evaluating Salesmen Stir Interest

EDITOR:

We read with a great deal of interest your article in the July 1959 issue of THE REFRIGERATION & AIR-CONDITIONING BUSINESS entitled "Hire the Right Salesman."

We shall appreciate the name and address of the evaluating concern of which you speak. We are anxious to avail ourselves of their services.

TED R. BROWN
Refrigeration Distributors Corp.
Salt Lake City, Utah

* * *

EDITOR:

In your July issue you had an article regarding a $20 test which can be given to prospective employees to determine if they have the necessary background to make good salesmen.

Could you please tell us whom we could contact to purchase this type of test?

DANIEL H. NEVIASER
Neviaser & Hoddinott, Inc.
Washington, D.C.

A number of firms offer personnel testing of this type, but the one referred to specifically in this article is Sadler and Associates, 333 N. Michigan Ave., Chicago 1, Illinois.

You're Right, Mr. Fisher! We Do Have Some Answers

EDITOR:

In your May issue you printed an article on "How To Prevent 9 out of 10 Business Failures". I can use that type of information, as I have been fighting a three year losing battle. Maybe you have some of the answers?

BERT P. FISHER
Southern Furnace & Supply, Inc.
Houston, Tex.

Of course nobody has all the answers to problems like this, because too much depends upon the individual and upon the specific circumstances. That's why, in the article referred to by Mr. Fisher, we advocated an industry-wide program of business management training sponsored by an industry association such as Air-Conditioning and Refrigeration Institute.

If such a program should be developed, we are convinced that it would benefit the entire industry. But for those who, like Mr. Fisher, need some practical help right now we heartily recommend the 12-part "You're the Boss" series of articles on business management that we published last year. These articles were prepared exclusively for us by George C. Webster, a business management consultant with many years of practical experience in successfully operating air-conditioning businesses at the dealer-distributor-contractor level.

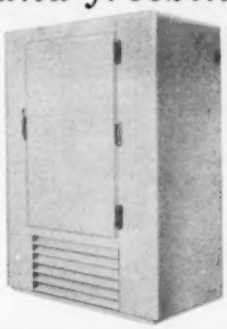
Reprints of these articles are still available at $4.20 for the complete set of 12 articles. More

Continued on page 77

NOW... **NOR-LAKE**
brings you user-planned, user-tested cooling and freezing!



WALK-IN COOLERS—All metal walk-in cooler—one of NOR-LAKE's most popular units! Shipped knock-down in easy-to-put-together sections. Optional Plug-In Panel refrigeration unit mounts on wall or ceiling. Wood or metal walk-in coolers available to your size or height specifications.



REACH-IN REFRIGERATORS—Designed for small stores, restaurants, schools, and industry. Triple door seals. Heavy Fiberglas insulation. Automatic defrosting. Baked enamel finish standard. Model RI Series: 8 models up to 45 cu. ft.



SLIDING DOOR MILK BEVERAGE COOLERS— Just 34½" high — perfect for under counter use. E-Z slide lids disappear completely. Adjustable temp. control. Welded steel construction stainless steel or baked enamel finish. 18 sizes — up to 40 12-oz.-bottle case capacity.

■ ***ALL MODELS KEPT IN STOCK FOR IMMEDIATE DELIVERY***
■ ***ALL MODELS AVAILABLE IN STAINLESS STEEL***

NOR-LAKE, *Inc.*
Second Ave. and Elm,
Hudson, Wis., Dept. 204



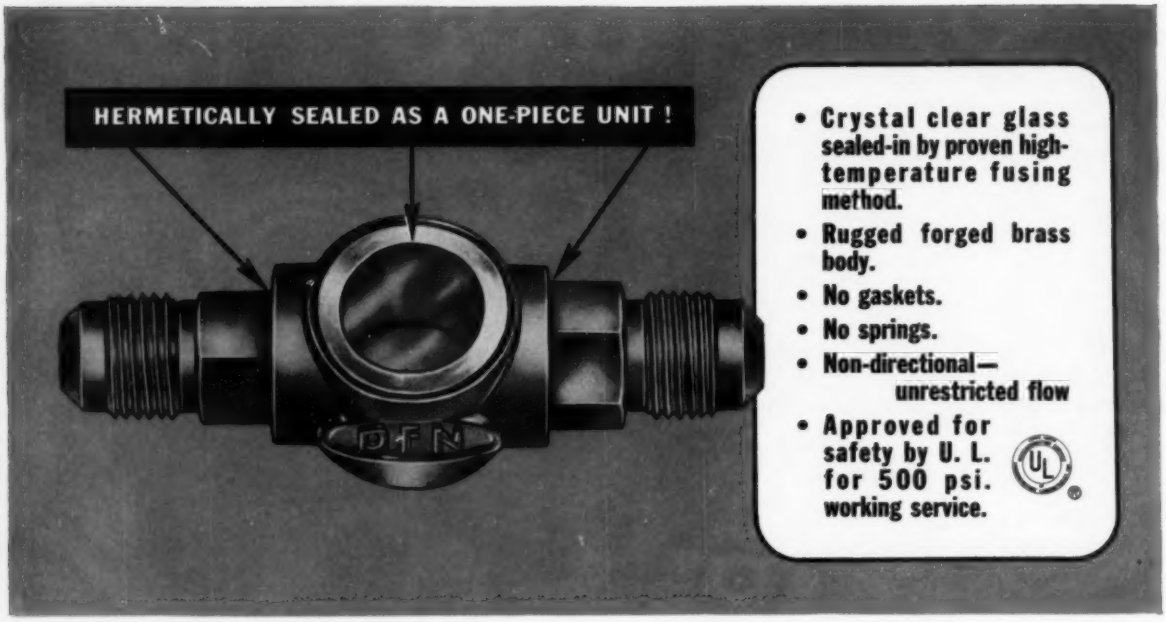
Go **NOR-LAKE** all the way—write for FREE, illustrated information:

Please rush FREE illustrated information on ☐ Walk-In Coolers
☐ Reach-In Refrigerators ☐ Milk and Beverage Coolers
☐ Other _____
NAME _____
ADDRESS _____
CITY _____ STATE _____

Circle No. 63 on Reader Service Card

DFN LIQUID INDICATORS

Guaranteed Permanently Leakproof !



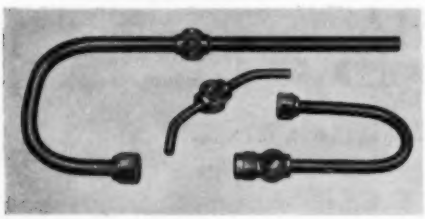
Available with Single and Double Ports in wide range of standard and special connection sizes.

DFN Liquid Indicators not only are highly dependable in service—they are fast and easy to install. One-piece unit can be brazed into the line without assembly or disassembly. Once installed, you have a completely hermetic system. Improved DFN Liquid Indicators cost no more than other types. See your wholesaler, or write for literature.









MANUFACTURERS !

Shown are typical special assemblies incorporating DFN Liquid Indicators, fabricated to manufacturers' specifications. We invite inquiries on your special requirements.

The McIntire Company
Okner Parkway, Livingston, N. J.

DFN DRIERS • FILTERS • STRAINERS • ACCESSORIES

Circle No. 31 on Reader Service Card



Exclusive features, most versatile line, high-profit sales . . . you get all three with

Climate by Chrysler



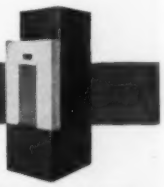
There are three sound reasons why dealers who sell Chrysler heating and air conditioning bank bigger profits . . . all year long.

First, Chrysler offers the exclusive features your customers want. For example, Chrysler's unique 3-way air purification system, the economical new Power Miser compressor, and the patented Contour Flame gas burner are the kind of sales clinchers that make your customers happier and your bank balance bigger.

Second, Chrysler offers the most versatile line of air conditioning in the industry. You can estimate closer because you can depend on getting the best—and most profitable—combination of units for any job. And you can offer better service because your Chrysler distributor stocks parts and accessories for fast delivery.

Third, Chrysler dealers *make more* on what they sell . . . and *keep more* of what they make. Prices are competitive—and then some—with anything on the market today. And, with Chrysler's reputation for product dependability, your profits won't be drained away by costly service calls.

There are no slack seasons when you sell Chrysler Heating and Air Conditioning. Get the full story from your local Chrysler Distributor . . . today! His name is in the Yellow Pages.



CHRYSLER
AIRTEMP

Airtemp Division, Chrysler Corporation, Dept. O-99, Dayton 1, Ohio
Canadian Distributor: Therm-O-Rite Products, Ltd., Toronto, Ontario

Circle No. 32 on Reader Service Card

INSIDE STORY

reveals why Penn water valves stay on the job longer!

Look inside the Penn water valve shown below. See how the two diaphragms keep water away from the bellows, range spring and sliding parts. Water... with its rust, corrosion and sedimentation... never has a chance to attack these "working parts" and cause destruction. That's why the Penn Series 246 stays on the job much longer than ordinary valves!

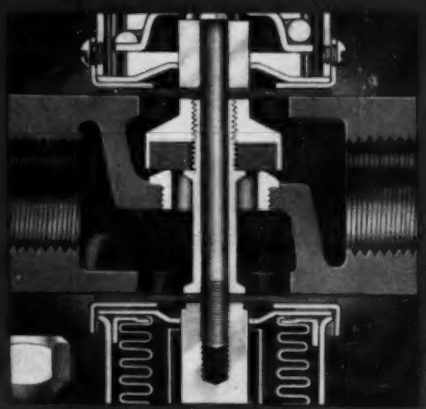
This is one of the many reasons why more manufacturers and installers buy Penn than any other valve and why we say... the Series 246 is your best buy! Ask your wholesaler, he'll tell you...

Try Penn on your next job!



Wide range of sizes and capacities available. All-Range model, suitable for both R-12 and R-22, available in ⅜", ½" and ¾" sizes.

No rust, corrosion and sedimentation. Exclusive design keeps water away from bellows, range spring and sliding parts.



PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Circle No. 33 on Reader Service Card

LET'S TALK *Business*

Industry Figures Needed at Local Level

IT's like an unwritten law in our field that when one publication editorializes on a specific subject all other publications avoid this subject like the plague. No one wants to be placed in a "me too" position, it seems.

If such a law exists, I'm breaking it right now.

In the July 13 issue of *Air Conditioning, Heating & Refrigeration News* its editor and publisher, George Taubeneck, took issue with the Air-Conditioning and Refrigeration Institute in its failure to report shipments and inventories of basic products in the refrigeration and air-conditioning industry other than to its own membership. He pointed out that in its failure to collect and publish full and honest statistics the industry has:

"(1) Stunted its own growth; (2) encouraged ruinous competition and subsequent price cutting; and (3) has acquired a bad reputation amongst investors, management counsellors, executive recruiters, local merchandisers, and the general public."

We say Amen to all the points made by George.

And you — whether you are a wholesaler, contractor, dealer, installer or service organization — should be as eager as we are to see such information published in a geographical breakdown.

I remember all too well when I had the responsibility for setting up distribution of product in certain areas of the country how absolutely pitiful my answer was when some smart guy would ask me: What is the market for air-conditioning here? How much product is sold *here*? What are adequate inventory requirements for us *here?* What has been the trend *in this area?*

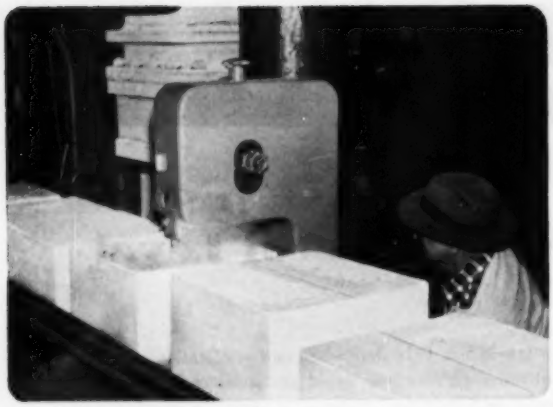
I mouthed figures no more accurate than those some other guy had mouthed to me. The "market data" I offered was strictly by guess and by gosh.

You, as an independent business man, are entitled to know how much industry product goes into your area for one reason — your dollars are required to inventory and sell that product. Three years ago you could get smart money to gamble on an "if come" basis. But today there is a hesitancy to make such gambles.

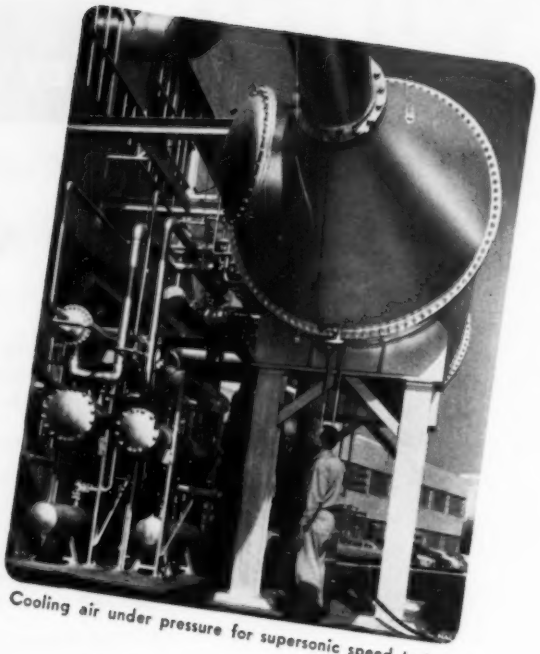
If your supplier is a member of ARI you should urge — in fact, you should insist — that the assembled figures on product shipments and inventory statistics by geographic area be made available to you. Point out to him that if they are you will be better prepared to give him adequate coverage — adequate coverage not only in relation to the basic facts of today, but also in relation to your considered judgment as to your business possibilities for tomorrow.

Good luck and good selling.

Thom Muir



Making dry ice at 109° below zero using standard ammonia compressors in an improved cycle.



Cooling air under pressure for supersonic speed tests.

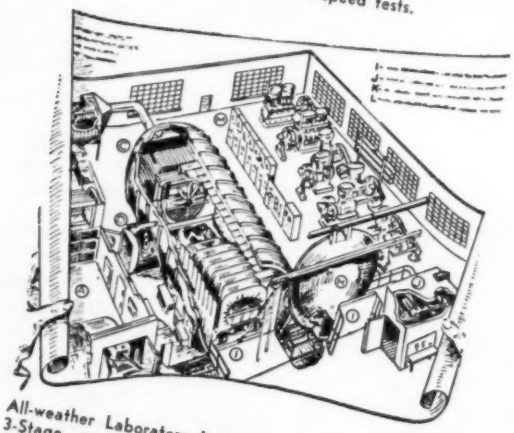
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If you need any type of industrial or commercial cooling—for quick freezing, cold storage, ice making, humidity control, low temperatures, condensing, air conditioning, or any process work—contact the nearest Frick Branch or Distributor for recommendations and estimates.



All-weather Laboratory built for U. S. Army. Uses 3-Stage compressors; maintains Arctic, tropic and stratospheric conditions.

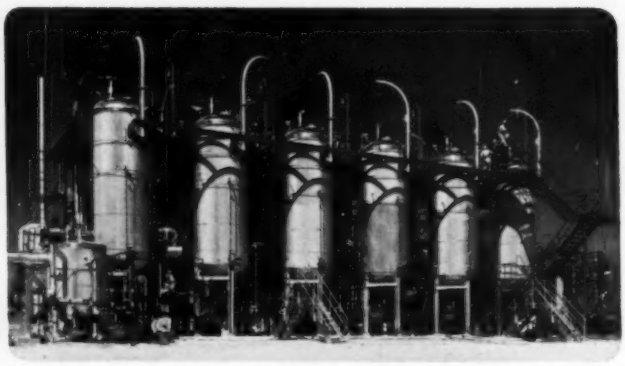
DEPENDABLE REFRIGERATION SINCE 1882

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Test laboratory work for temperatures down to 140° below zero.



Frick patented cooling coils and controls have doubled the output of synthetic rubber reactors.

Circle No. 34 on Reader Service Card

SNAPSHOTS

Help Him Sell

. . . the idea of residential air-conditioning. This dealer feels that equipment shots mean little to the average prospect, so he takes pictures like these, instead . . .



by **Robert Walsh,** associate editor

A SNAPSHOT ALBUM of installation pictures in which not a single piece of equipment shows is one of the best tools Al Roesch, Tri-City York Co., Catasauqua, Pa., has found to sell residential air-conditioning. Actually these photos look more like they might be used to sell real estate, rather than air-conditioning, but Roesch finds they serve his purpose well.

"It's important to make prospects realize that they're not alone in their desire to own year-round air-conditioning." Roesch explains, "and the best way to do this is to show them other homes in their neighborhood where year-round air-conditioning has been installed."

At the time a job is finished Roesch takes a picture of the outside of the home. "You can show people all the installation pictures you want," Roesch continues, "but it doesn't mean anything to them. To sell year-round air-conditioning you have to show the prospects something with which they can identify themselves.

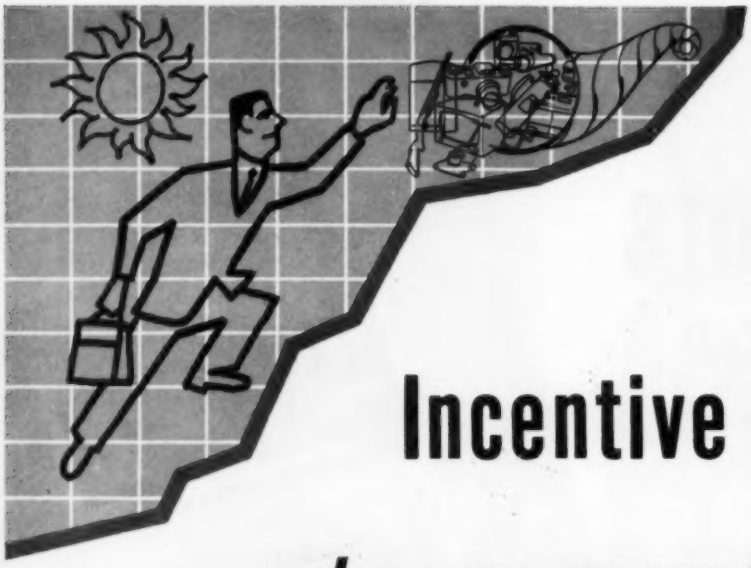
"Not one of our pictures shows an air-conditioner or even so much as a piece of ductwork. But they do help us sell the jobs. In an area as small as this we can almost always show a prospect a picture of a particular home he has seen and remembers. Even if we can't do this, we can at least find a photo of a house in an area with which the prospect is familiar.

"Once we have done this we have brought the whole concept of year-round air-conditioning closer to home, and the rest is easy." Roesch explains. "Quite often if the family has a special need or reason for wanting air-conditioning we pick out a picture of another home where the family had the same problem. It's amazing how, by pointing to a photograph of a home, a man and wife can identify themselves with the people living there even though they have never seen them."

Since the pictures are only intended to be snapshots, high quality photography isn't necessary. Any inexpensive camera can be used to do the job. Roesch uses a small camera and roll film to take the snapshots. When the pictures have been developed Roesch prints the name and address of the customer across the top. Across the bottom he prints a description of the job and the equipment installed.

He tapes the pictures to an 8½ x 11" sheet of heavy white paper with cellophane tape. Then he protects each sheet by slipping it into an acetate folder, punching it, and placing it in a three ring binder.

"Of course we use plenty of manufacturer's literature too," Roesch concludes, "but it takes the combination of the two to do a real job of selling. We may switch back and forth from one type of material to the other, but being able to show pictures of homes and streets that the prospects recognize is the real clincher."



Incentive Programs

. . . how you can use them profitably

You can motivate your salesmen the same way your supplier often motivates you — by offering attractive merchandise awards for meeting specific goals

REMEMBER THE SALES INCENTIVE PROGRAM, sponsored by a manufacturer when you won an all-expense vacation, or a toaster, or an expensive camera?

Remember how your own sales efforts were sparked during the campaign and helped both you and the manufacturer produce plus sales and profits?

Refrigeration and air-conditioning contractors and dealers are taking a lesson from manufacturers in using such special incentive sales tools to inspire extra effort on the part of their employees.

But many contractors and dealers feel that such campaigns are too complex, too costly, and too much trouble. Actually a plan can be easily set up and if properly managed should result in the total cost being absorbed in plus profits of added sales.

There are four good reasons why special incentive programs can help spur your salesmen to greater efforts. First, they act as a monotony breaker. The program can add the element of excitement and glamour to selling and take the humdrum existence out of the everyday life of a salesman. Second, a special incentive can make your entire organization concentrate whole-heartedly on certain sales or service targets known to be profitable. Third, merchandise and travel can be easily dramatized and can fire the imagination of your salesmen. Fourth, a prize is an indication of an appreciative employer, and satisfies the normal hunger for recognition which every salesman has.

Once you have decided to use an incentive program, plan to use the services of a good counseling firm in the business of assisting contractors and dealers in setting up programs. There are several such firms. They charge nothing for their advice. They make their profit only from the sale of the premium awarded. As the sponsor of the program, the merchandise and travel awards come to you at a discount.

To set up a program you must first determine which refrigeration or air-conditioning units are to be included, and attach a merit point value to each. Merchandise prizes illustrated in a typical prize catalog price the merchandise in ½¢ merit points. Thus, if an air-conditioning unit sells for $400 and you value that sale at 5%, you would offer $20 worth of prize points for its sale or 4000 points at one-half cent each. You then list these units and their merit point reward, and obtain prize books. You can issue prize point credits to the salesmen from time to time as sales are made, and the men then can redeem their points by ordering prizes within their point winnings.

Another, and perhaps simpler, method is to use a prize sheet which gives the salesmen a selection of prizes all in the same price range. There are sheets available in prize categories of 5, 10, 15 and 25 dollars. Each sheet features a selection of merchandise all of which averages out to that one price. You can select a sales goal in dollar volume for each salesman for a given period of time.

Eliminates Point System

With this method prize points are eliminated. Either the salesman hits his quota and wins his selection of prizes from the sheet or he doesn't. This same method can be used as an offer for the sale of one particular type of unit, or for overall sales dollar volume, whichever you prefer.

If you think travel would be more popular, you can obtain a catalog of package trips from a prize supplier and distribute these catalogs. Each trip is priced in merit points. The salesmen win the points, select their trips and the prize supplier makes all the arrangements.

You can ring in the servicemen on an incentive program by inviting them to furnish leads as to where defective or old units are located. When sales are made based on a serviceman's lead, he shares in the prize points on a predetermined basis. A serviceman who goes about his work without being sales minded or sales motivated can cost you plenty of replacement business by not making it known when he services equipment which should be replaced.

Don't make the mistake, though, of thinking that you can use an incentive program only in connection with your company's sales activities. You can use this technique equally effectively to stimulate improved operations in your service shop, among installation crews, and in other departments of your business. Any incentive counseling firm will be glad to work with you in planning a program to meet your specific objectives.

Once you've decided to use an incentive plan, how do you go about finding a firm to set it up for you? Best bet is to contact the manufacturers who are your major suppliers. Chances are they have used incentive programs or are at least familiar with the firms that specialize in planning them and can help you get started on the right track.

When arrangements for your incentive plan have been completed, it's important to announce details of the program to the participating employees and their wives. Invite them all to a special meeting or dinner at which you can explain the plan to the entire group.

The wives are invited to encourage their husbands to be big winners. She can be made the official prize point scorekeeper and encouraged to ask her husband every day how many points he has accumulated so far in the program.

Mailings should be directed to the man and wife during the campaign. Packaged programs are available through prize incentive houses. Each package contains a series of mailers with suggested messages to the dealer. These can be personalized, typed or mimeographed and mailed to the participants every week or so.

Give Salesmen Plenty of Time

In planning the duration of the incentive program don't let it run less than 60 days. 90 days is a better period. It takes a week or more for the average salesman to get into the swing of the idea of selling more to win more.

At the end of the campaign it's good to hold a victory celebration where the top winners and their wives can be saluted, the extent of their winnings analyzed, and a good feeling engendered that will lay the groundwork for the next incentive program.

After The Incentive Program Is Forgotten—These Long-Term Benefits Will Remain . . .

NEW CUSTOMERS — As your employees make extra sales, they are creating new customers for you in service, maintenance and eventual replacement.

NEW SKILLS — Salesmen will sell smarter as they strive to win prizes. New skills will be formed in customer persuasion while service and maintenance employees discover that they too are salesmen.

NEW HABITS — Service and maintenance people will develop the habit of keeping salesmen informed of choice sales leads. And salesmen will develop the habit of upgrading jobs and tying in additional products.

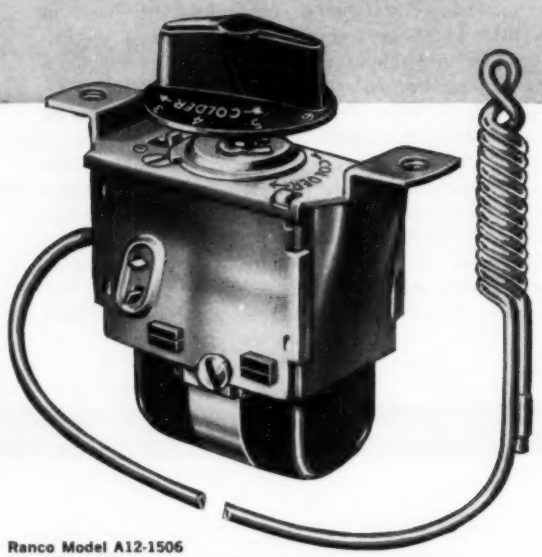
NEW ATTITUDES — Your employees will form a new — and better — attitude toward you, their work, the lines they represent and their customers.



Keeps beverages colder on hot days...installs quickly... performs perfectly!

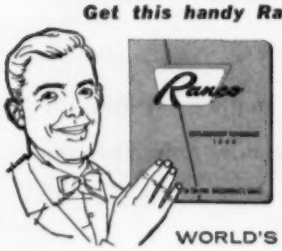
OFFERS BIG CUSTOMER ADVANTAGES: Dial adjusted cut-out settings on the Ranco Model A12-1506 Replacement Control for beverage coolers *keep inside temperature at desired level, regardless of outside temperature fluctuations.* Variable cut-out settings range from 9° to 22° F. Other advantages include manual OFF position on the dial knob, and constant cut-in (factory setting) of 38° F.

SPECIFY RANCO CONTROLS for *all* your refrigeration, air conditioning and appliance needs. Your Ranco wholesaler can give immediate delivery on the most commonly used Ranco models—fast, dependable service on "special" orders. He'll be happy to help you. Why not check with him today!



Ranco Model A12-1506
Exact Replacement Control For Beverage Coolers, UL Approved.

Get this handy Ranco Reference Manual



No. 1660 lists nearly 5000 Ranco Replacement Control applications, most complete line in the industry. Buy your copy from your Ranco Wholesaler. (Not available from factory.)

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Circle No. 35 on Reader Service Card

Don't Let Slime and Algae Foul Your Systems

SLIME AND ALGAE, both of which result from the growth of living organisms, are two of the worst potential trouble makers in any refrigeration or air-conditioning system using circulating cooling water that is exposed to the air during any part of the cycle.

Because they are caused by living organisms, slime and algae are often tougher to control than scale and corrosion, points out Dr. Sidney Sussman, chief chemist of Water Service Laboratories, Inc., specialists in water treatment.

Many species of slime-producing bacteria and algae are involved, he explains, and each responds differently to various methods of treatment. Even within a given species, not all of the bacteria have the same response to a given dosage of any slimicide, just as human beings will respond differently to the same dose of a given medicine. So it is not always possible to completely clear up slime and algae problems merely by including a fixed amount of slimicide among the chemicals used for scale and corrosion control.

Before tackling the problem of combatting slime and algae, it is helpful to know just what these organisms are and what trouble they cause.

Slimes are generally grayish or yellowish accumulations of mucoid material produced by bacteria during their growth processes. Slimes tend to cling to many parts of an air-conditioning system, where they can interfere with the flow of water through nozzles, cause high head pressures in refrigerant condensers, produce odors in air washers, and increase corrosion in the equipment.

Algae are colored organisms, generally some shade of green (like the green scum frequently seen on the surface of ponds), that require sunlight for their growth. They are often found in the head pans of cooling towers which have perforated head pans for water distribution. They can grow quite rapidly to form a thick mat of green organic material which may clog the holes or nozzles in the head pan and interfere with the operation of the cooling tower.

These organisms are picked up from the atmosphere, along with other matter, wherever circulating cooling water is exposed to the air, Dr. Sussman explains. This happens in such equipment as cooling towers, evaporative condensers, and air washers which act as air scrubbers.

Among the materials scrubbed from the air are acidic gases and air-borne dirt. This dirt is a widely varying mixture of particles of sand, construction materials, soot,

Continued on Page 58

ELECTRONIC LEAK DETECTOR CUTS SERVICE TIME



A PORTABLE LEAK DETECTOR used in servicing air-conditioners has helped Jordan Service Co., Louisville, Ky. reduce the average time required to locate a leak to five minutes. Developed by General Electric, the instrument can detect a leak which has a gas escapage of only 1/100-ounce per year. The detector is designed to spot leaks in hermetically sealed units. Leaks are indicated by an adjustable-volume loudspeaker, as well as by instrument indication on a control panel.



When it comes to system selection

DON'T LEAVE IT TO CHANCE

This Pennsylvania frozen food storage company took the gamble out of selecting the right refrigeration equipment by careful evaluation of several types of systems before choosing

A FLIP OF A COIN is one way to determine the type of refrigeration system to use in a frozen food warehouse, but it sure isn't the best way. The process of elimination, while more time consuming, is much more scientific, and the end result is certain to be better.

The architectural firm of Grove, Shafer & Assoc., Pittsburgh, Pa., used just such an analytical study in designing a refrigeration system for Allegheny Cold Storage Co.'s new frozen food storage facilities in Pittsburgh. The building has well over 50,000 sq.ft. of refrigerated area, and is large enough to accommodate 18 million pounds of frozen foods. The problem of refrigerating this area was complicated by that fact that the storage space is all in one room which measures 367′ long, 114′ wide, and 22′ high.

After considering several types of refrigeration systems in common use, the designers decided to divide the room into bays and cool each bay with an individual unit cooler.

50 Krack unit coolers, manufactured by Refrigeration Appliances, Inc., were installed. Each cooler is ceiling mounted and located to serve one of the 50 bays. The designers feel that this approach has incorporated most of the advantages of other types of refrigeration systems, and eliminated many of the disadvantages.

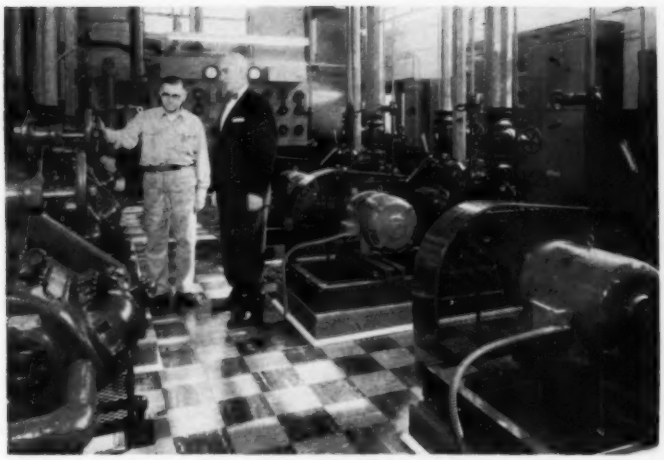
In selecting the system to be used, the designers had to take many factors into account. Temperatures had to be uniform and minimum velocities were required. The owners wanted to hold the initial investment to a minimum and at the same time have their design specifications fulfilled. Operating and maintenance costs had to be minimized. The architect wanted to make the structure of the lightest weight consistent with good architectural practice. All of these conditions had to be accomplished in conjunction with the design of the refrigeration system itself.

Specifically, these were the prime design requirements:

- Little or no motor load in the refrigerated area.
- Minimum amount of labor for defrosting.
- No lost floor space.
- No insulation to house refrigeration units.
- Lightweight building structure.
- Minimum inside height in refrigerated area.
- Quick, automatic defrosting.
- Minimum refrigerant charge.
- Good air distribution at minimum cost.
- Flexibility of operation.
- Minimum operating and maintenance costs.

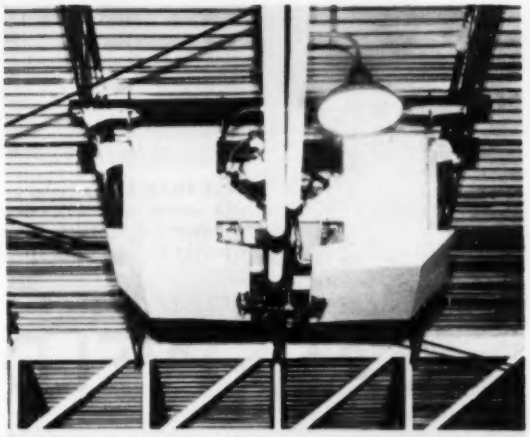
Several refrigeration methods were studied to see if they would satisfy all of the requirements. The first system considered involved the use of overhead plain or finned pipe coils. This system would not have required motors in the refrigerated area. However, because of the size of the room a large amount of coils would have been required.

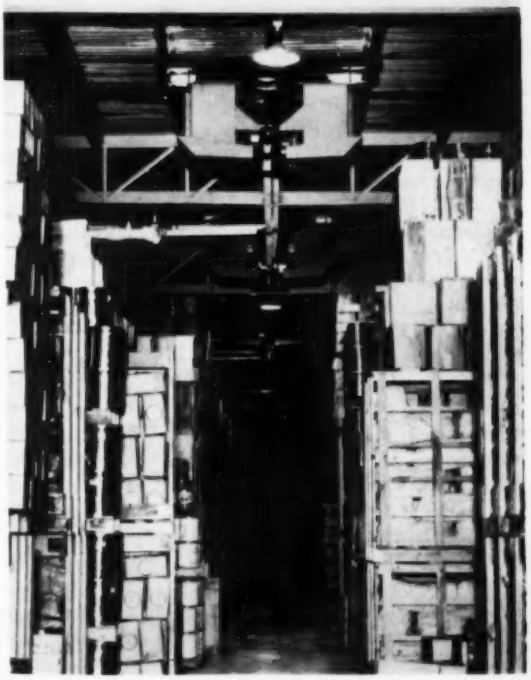
Unless some provision was made for frequent defrosting the result would be an accumulation of tons of ice. This, plus the weight of coils and supports, and the weight of the refrigerant in the system, would necessitate the use of heavy ceiling supports.



CHECKING THE EQUIPMENT that was finally selected to cool the Allegheny Cold Storage Co.'s new frozen food warehouse in Pittsburgh are the chief engineer (left) and the owner and operator. Three York booster compressors (right background) add flexibility to the system.

50 UNIT COOLERS, each cooling a 38 x 28' bay, were selected as the best way to keep temperatures down in the 18-million-pound capacity frozen food storage room. Units are automatically defrosted with hot discharge gas.





In addition, the room is so large that regardless of how the coils were installed, they would require many separate feeds regardless of which type of refrigerant control was used.

Another problem which would have been encountered with this type of system was the method of defrosting. Normally this type of system is defrosted by means of hot gas with accumulated frost or ice dropping on to canvas strips which have been placed on the floor below the coils. At intervals the canvas strips are rolled up and removed from the room for disposal of ice or frost. In the case of Allegheny Cold Storage, these canvas strips would have to be approximately 144' long by 8' wide, obviously too heavy and bulky to handle.

In addition, this method of defrosting would have required 13 similar manual operations. Because of the 22' room height there was no guarantee that the ice would drop onto the cold floor and refreeze. It could have become a dangerous situation.

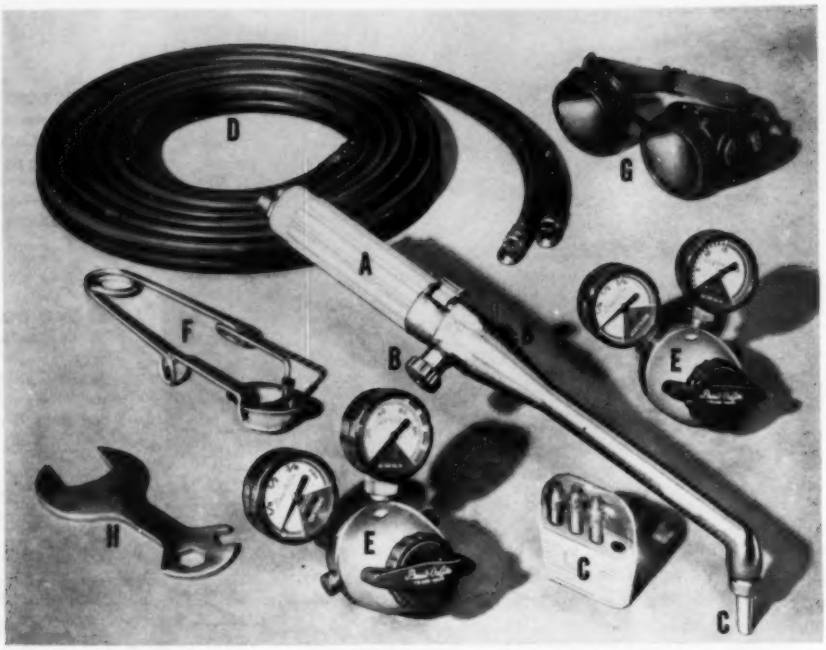
The second system considered for use involved floor type blowers containing pipe coils and air circulating fans. But this system would have occupied valuable floor space, and required an expensive system of duct-work and outlets for uniform air distribution. And it would have required a minimum of 65 hp in motors to drive the fans and distribute the air.

Operation of the fans would have raised the normal operating costs beyond a desired level. The motors would also add approximately 14 tons to the refrigeration load, requiring the use of larger compressor and evaporative condensers with correspondingly larger motors.

To save floor space and still use this type of system, consideration was given to elevating the blowers on structural steel supports. However, this would have interfered with the stacking of products being stored.

Placing the units above the loading dock was still another consideration given this type of system. But this would have required a heavy roof structure and heavy supports for the dock, plus the installation of

Continued on page 78



LESS THAN $100 will buy an oxy-acetylene welding and cutting outfit like this, including: torch (A) with control valves (B) and both welding and cutting tips (C); hoses (D); regulators (E) for gas cylinders; flint lighter (F); goggles (G); and wrench (H). Compact and readily portable, this equipment can be used in the field as well as the shop.

GAS WELDING

. . . a profit-building tool for the piping contractor

EDITOR'S NOTE: In our August *issue we featured an article titled "Pipe Welding . . . can it cut your installation costs?" The facts presented in this article added up to a resounding "Yes!" for the contractor who does much non-critical low pressure piping for refrigeration, air-conditioning, or heating jobs.*

What type of welding equipment should you use? The August article made it clear that either gas or arc welding can be used on pipe from 2 to 6", the normal size range.

To help you decide, we are presenting this article on gas welding. Information for this article was provided by Linde Co., Div. of Union Carbide Corp. Next month we will publish a similar article on arc welding.

What is gas welding? It is a means of joining two pieces of metal by heating with a gas flame. This flame is produced by feeding oxygen and a combustible gas, such as acetylene, into a welding torch where they are mixed to the proper proportions before being ignited. The result is a controllable flame capable of developing the intense heat necessary for the welding process. In the case of acetylene, the most widely used fuel gas, this is about 6000 F. The welding can be done with or without applying physical pressure, and with or without using filler metal.

What equipment is required? Basic items of a gas welding outfit include the torch, complete with gas control valves and tips of the desired type; separate tanks of fuel gas and oxygen, each with its own gas regulator; and hoses to connect these tanks to the torch. Accessory items include a flint lighter to ignite the torch and special goggles to shield the operator's eyes from the flame.

How much does it cost? What you spend for gas welding equipment naturally will vary with the type of unit you get, but you can buy a complete outfit with ample capacity for all your pipe welding needs for less than $100. With a torch of this type you can weld metal up to 3/8" thick and cut through 2" of steel.

Once you have the basic equip-

ment, your only continuing cost is for the gas and oxygen you use; for the filler metal, which comes in the form of welding rods; and for flux. The cylinders of gas and oxygen are supplied on an exchange basis. The rods and flux, of course, are consumed as they are used.

What can it do for you? You can use the oxy-acetylene flame, with its 6000 F temperature, in many ways other than welding pipe and pipe fittings. For example, you can use it to bend pipe around obstructions, thus reducing the number of joints. This cuts both job time and labor costs.

Also, you can use this flame to make reducers and other special fittings right on the job, as needed. And you can use it for brazing or silver soldering, as well as for welding and cutting.

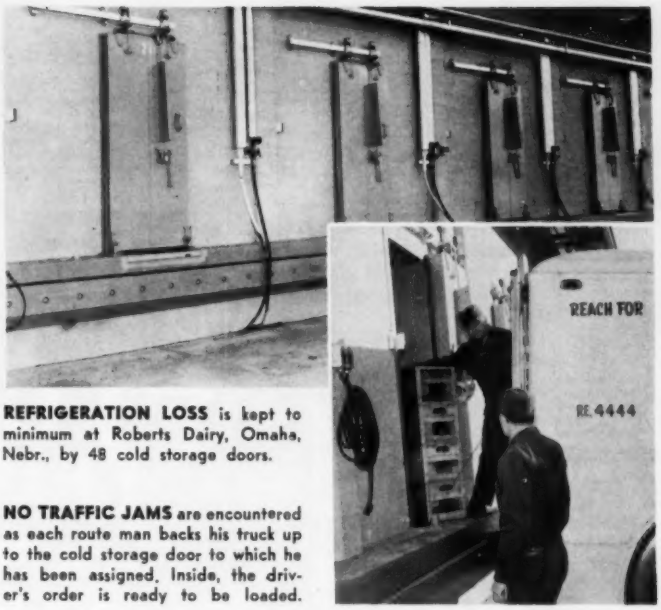
A gas welding outfit is extremely handy as a maintenance tool around the shop. If you make the most of it in this way, you will find that it saves you even more time and money.

What do you need to know? Although gas welding is relatively easy to master, some training is needed for the mechanic who is going to use the equipment. While this training should be complete, it does not take a great deal of time. Here

Continued on page 76



ON-THE-JOB USE of gas welding equipment is demonstrated by these workmen installing piping grid for a Boston skating rink.



REFRIGERATION LOSS is kept to minimum at Roberts Dairy, Omaha, Nebr., by 48 cold storage doors.

NO TRAFFIC JAMS are encountered as each route man backs his truck up to the cold storage door to which he has been assigned. Inside, the driver's order is ready to be loaded.

A Building Full of Doors

FORTY-EIGHT COLD STORAGE DOORS have proven to be the key to a more efficient loading operation for Roberts Dairy, Omaha, Nebr. Roberts asked architects to design a new building for high volume handling without excessive refrigeration loss.

A 241′ long, 34′ wide building with 48 cold storage doors was erected adjacent to the company's main processing plant. Each route man backs his truck up to one of the 48 doors of the cooler building, and unlocks and opens the cooler door to which he is assigned. Inside, the previous day's order has been assembled and is waiting to be loaded. This eliminates waiting in line, and each driver can load his truck in just a few minutes.

The 48 Jamison doors are of the single leaf horizontal sliding type. They slide horizontally on an overhead track and expose a doorway designed to provide enough space for easy handling, but with very little refrigeration loss.

Very little manual effort is required to open or close the cooler doors even though, when closed, the door seals are tightly compressed against the frame. Opening the door releases a locking arrangement at the top and the door swings slightly outward, freeing the seals and eliminating friction between the door and its frame.

A mechanical conveyor runs from the filler machines in the processing plant to the end of the new cooler building, and transports dairy products to the loading areas.

Besides controlling refrigeration loss, fewer workers were needed, and traffic jams were eliminated.

Architects for the building were Cecil A. Martin and Assoc., Omaha, and Hertel, Johnson, Eipper, Stopa of Chicago. Contractor was A. Borchman & Sons, and insulation was done by Low Temp Insulations, both of Omaha.

THERMOSTATIC EXPANSION VALVES



Adjustable superheat, internally equalized. R-12, 22, 40. Cap. ⅛ - 1½ tons, R-12.

Adjustable superheat, internal or external-type equalizer. R-12, 22, 40. Cap. ½ - 3 tons, R-12.

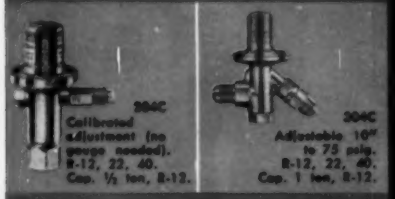
Adjustable superheat. External-type equalizer. Solder connections. R-12, 22. Cap. 1 - 3 tons, R-12.

Adjustable superheat and pressure limit. Internal or external-type equalizer. R-12, 22, 40. Cap. ½ - 1½ tons, R-12.

Adjustable superheat. External-type equalizer. Solder connections. R-12, 22. Cap. 5 - 12½ tons, R-12

Duo-flo construction. Adjustable superheat. External-type equalizer. R-12, 22. Cap. 16-25 tons, R-12.

AUTO. EXPANSION VALVES



Calibrated adjustment (no gauge needed). R-12, 22, 40. Cap. ½ ton, R-12.

Adjustable 10# to 75 psig. R-12, 22, 40. Cap. 1 ton, R-12.

WATER REG. VALVES



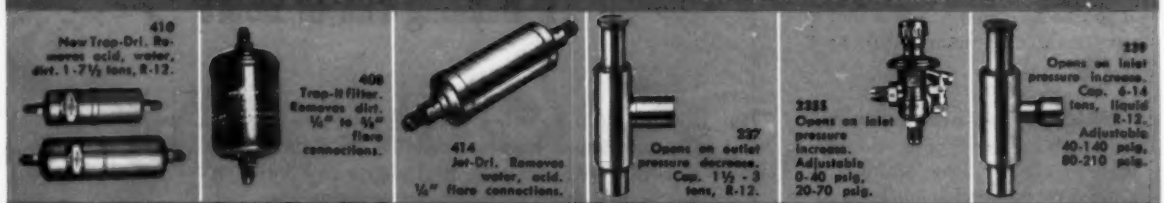
New self-cleaning, chatterproof, sliding action. 63-300 psig. ¾", ½", ¼" NPT

Large capacity — up to 80 gpm at 50 psig. water pressure. 70-170 psig. R-12. 1", 1¼" NPT.

VALVES
FILTERS
DRIERS
FOR REFRIGERATION, AIR CONDITIONING

FILTERS AND DRIERS

PRESSURE REGULATING VALVES



New Trap-Dri. Removes acid, water, dirt. 1-7½ tons, R-12.

Trap-It filter. Removes dirt. ⅛" to ⅞" flare connections.

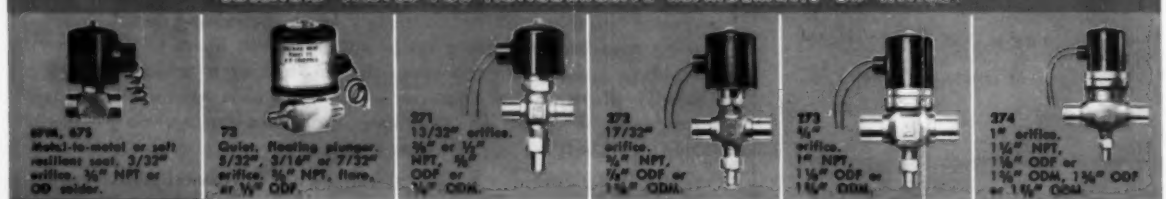
Jet-Dri. Removes water, acid. ⅛" flare connections.

Opens on outlet pressure decrease. Cap. 1½ - 3 tons, R-12.

Opens on inlet pressure increase. Adjustable 0-40 psig. 20-70 psig.

Opens on inlet pressure increase. Cap. 6-14 tons, liquid R-12. Adjustable 40-140 psig. 80-210 psig.

SOLENOID VALVES FOR NONCORROSIVE REFRIGERANTS OR WATER



Metal-to-metal or soft resilient seat. 3/32" orifice. ⅜" NPT or OD solder.

Quiet, floating plunger. 5/32", 3/16" or 7/32" orifice. ¼" NPT, flare, or ⅜" ODF.

13/32" orifice. ⅜" or ½" NPT, ⅝" ODF or ¼" ODM.

17/32" orifice. ¾" NPT, ⅞" ODF or 1⅛" ODM.

⅝" orifice. 1" NPT, 1⅛" ODF or 1⅛" ODM.

1" orifice. 1⅛" NPT, 1⅛" ODF or 1⅜" ODM, 1⅜" ODF or 1⅝" ODM

AUTOMOTIVE AIR CONDITIONING



For most cars. ⅜" inlet, ⅜" or ½" outlet. Internal or external-type equalizer. Pressure limiting 1½ ton, R-12. Factory-set superheat.

DISTRIBUTORS



Cap. ½-80 tons, R-12. ⅞" to 1⅝" ODF inlet. Removable orifice.

619 DEVICES for refrigeration and air conditioning control and their full specifications are organized for quick reference in the newest CC catalog. Only the basic models are illustrated on this page. *You should have the whole catalog.* Write for CC Catalog W-5-S today to the address below.

Creative controls for industry

CONTROLS COMPANY OF AMERICA

2418 N. 32nd St., MILWAUKEE 10, Wis.

COOKSVILLE, Ontario • Postfach 313, ZUG, Switzerland

Circle No. 36 on Reader Service Card



HOT TIPS on hunting, fishing, and camping help break down the sales barrier and make friends for York-Wagner, Milwaukee, Wis.

CATCH THEIR INTEREST

— *then sell 'em!*

BEFORE YOU ASK FOR THE ORDER you have to break down the sales barrier that exists between you and your customer. This is the opinion of Art Pope, of York-Wagner, Milwaukee, Wis. He feels that it is a basic sales technique when making a personal call that you begin the conversation by finding a subject of mutual interest in an effort to gain the customers friendship and confidence. Then it's time to swing the conversation around to air-conditioning.

Direct mail has the same problem as a salesman according to Pope. If the customer receives a piece of direct mail that immediately begins by screaming a sales talk, chances are he'll throw it out without even bothering to read it. On the other hand, if the direct mail piece offers him something of interest he'll read it, remember it, and probably pay close attention to the sales message.

With this in mind York-Wagner decided upon a direct mail program which would get their sales message across and would be of genuine interest to as many people as possible.

The company selected a series of folders entitled "Outdoor Trails" to capture the imagination of Milwaukee residents. The front of each folder features a colorful illustration related to hunting or fishing. The company's name and address is imprinted across the bottom half of the front.

The center of each folder has a feature article written by an authority in a particular sports field. The features discuss some of the finer points of camping, and various types of hunting and fishing. Other features in each of the folders include "Sport Shots" which briefly outlines interesting items about various game and wildlife. "North American Game" is the third feature in each folder. This describes various types of game found in North America.

Types of equipment and services offered by York-Wagner are described inside the folder. A line at the bottom of this section invites the reader to see the sports features inside.

The back of the folder is used to remind the reader of the company's products and services, or to tell him that York-Wagner is sending him these monthly folders.

The company has used an advertising agency to handle the mechanics of securing the mailing list and actually making the mailings. The folder was prepared by a rememberance advertising firm.

Have the mailings been successful? Art Pope thinks they have been. He feels that they have more than made up their cost in actual sales. Have they been well received? Proof of this is the large number of customers whom have asked that they be kept on the mailing list once they received the folders.

Throughout the year York-Wagner backs up this direct mail campaign with radio and newspaper advertising which is principally aimed at seasonal buying.

Let "VIRGINIA" show you a new profitable way to sell water treatment service



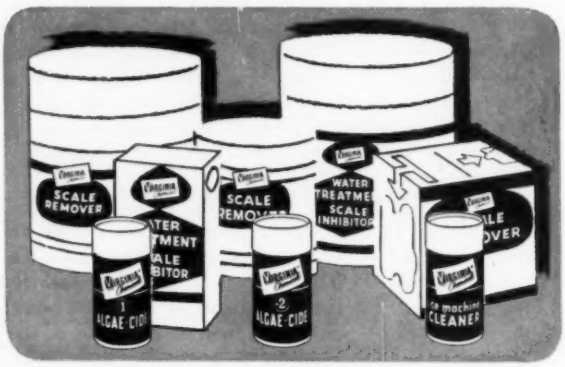
Want a healthy stimulus for your present business? Let "Virginia" show you how to sell water treatment service to not just a few of your customers, but virtually *all* of them! Increase your profits from 25 to 50%, keep your men busy all year round. This moneymaking plan is yours—just write for *free* booklet, "How to Turn Water into Money."



This new concept of water treatment service is easy to sell and easy to follow through. Water treatment the "Virginia" way requires almost no special training for service men. And your customers will appreciate it, too—because this service will add years of life to their air-conditioning or refrigeration equipment, reduce downtime and cut maintenance costs.



"Virginia" Water Treatment Chemicals make the service easy, effective and profitable. With "Virginia" Liquid Scale Remover, for example, units choked with thick scale are no problem. Powerful yet carefully inhibited, it goes to work instantly, cleans fast, has dissolving capacity 50% greater than similar cleaners. The light container is easy to handle, will not break.



Other "Virginia" Chemicals for efficient water treatment include Water Treatment Scale and Corrosion Inhibitor, Solid Scale Remover, Algae-Cides #1 and #2, and Ice Machine Cleaner, all available from your nearest wholesaler. For free folder, "How to Turn Water into Money," write Refrigeration Div., VIRGINIA SMELTING CO., 232 Jefferson St., W. Norfolk, Va.

ESOTOO • V-METH-L • CAN-O-GAS • VASCOCEL • PERMAGUM • PRESSTITE TAPE • SUNISO REFRIGERATION OILS
WATER TREATMENT CHEMICALS • NATIONAL SALES AGENT & REPACKER FOR DU PONT'S "FREON" REFRIGERANTS

VIRGINIA® Chemicals

Available in Canada and many other countries

Circle No. 37 on Reader Service Card

by Arthur H. Farr

APPLICATIONS Manual

THE HEAT PUMP PRIMER—Part 4

ECONOMICS is an important factor, at the present time, in the selection of the proper heat pump for any given structure.

This point was highlighted in Part 3 of "The Heat Pump Primer", published in the July issue of THE REFRIGERATION & AIR-CONDITIONING BUSINESS. This article compared the cooling and heating requirements of the identical house located in Tampa, Fla., and Columbus, Ohio, and showed that while they would have the same cooling requirements, heating requirements of the Columbus house would be double those of the one in Tampa.

In the present article we will study the Columbus house in relation to the operation of a heat pump through the heating season. Because of the importance of the economic factor, it is necessary to gather as much data as possible from the Weather Bureau so that the heating season can be broken down into segments.

Published data pertaining to Columbus lists the following information:

COOLING

1. Outside design temperature: 95 F d.b., 76 F w.b.
2. Highest d.b. temperature on record: 106 F
3. Estimated hours of operation per year at full load for residential cooling: 650

HEATING

1. Outside design temperature (ASHAE Guide): —10 F
2. Lowest d.b. temperature on record: —20 F
3. Average temperature during normal heating season: 40.4 F
4. Average yearly degree-days: 5277
5. Average monthly degree-days: July, 0; August, 0; September, 59; October, 299; November, 654; December, 983; January, 1051; February, 907; March, 741; April, 408; May, 153; June, 22.

It would be most helpful to also know the number of hours during a normal heating season that temperatures for each 10 degrees above the normal design temperature were recorded. We don't have this breakdown of the heating season, however, so we will use the data presented in Chart 1, which shows a typical heating load duration curve. This curve makes it evident that an installed heating capacity equal to only 50% of the calculated maximum requirements would maintain inside comfort conditions during more than 80% of the heating season.

With this information at hand, let us proceed to plot the structure heat loss curve on Chart 2 against the capacity of heat pump Unit B discussed in the previous article in this series. This heat pump contains two 1¾-hp motor-compressor units, and operates on a two-stage thermostat. It is necessary, therefore, to plot the heating capacity of this unit on both one-stage and two-stage operation.

The calculated structure heat loss at the outdoor design temperature of —10 F was 67,700 Btuh. At this same temperature, capacity of the heat pump on two-stage operation was 22,000 Btuh. Subtracting this capacity from the structure heat loss leaves a deficiency of 45,700 Btuh to be made up by supplementary electric resistance heaters.

If we divide 45,700 Btuh by 3413 (Btu/kw) we get a supplementary heat requirement of 13.4 kw. Heat pump Unit B has available supplemental heaters totaling 12 kw (in four stages of 3 kw each) or 16 kw (in four stages of 4 kw each). In the case of the Co-

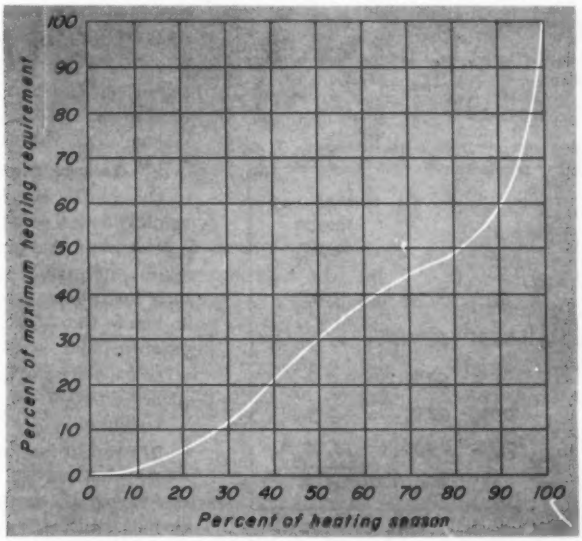


CHART 1 — Typical heating load duration curve. (Newton, Refrig. Eng., 1951)

lumbus house we would select 16 kw. This would not only cover the capacity required down to the outside design temperature, but also would provide some reserve capacity to handle those periods when the temperature falls below — 10 F.

Now we can plot the four stages of supplemental heat on Chart 2. The intersection of each of our six capacity curves (two stages of heat pump, plus four supplemental heaters) with the structure heat loss curve provides the six balance points indicated on the chart.

If we study each balance point in relation to the outside temperature and Btuh capacity at that point, we begin to predict the performance of heat pump Unit B over the entire heating season.

Balance Point No. 1

One stage of the heat pump would heat the structure down to 45 F. d.b. At this point the structure loss and machine capacity coincide at 21,000 Btuh. If our maximum heating requirement is 67,700 Btuh, then 21,000 Btuh represents 31% of this maximum requirement. From Chart 1 we see that 50% of the heating season would be carried by one stage of the heat pump.

Balance Point No. 2

The second stage of the heat pump would cut in when outside temperature reached 45 F d.b., and would carry the structure load down to 29.5 F d.b. The 34,000 Btuh indicated by this point is 50% of the maximum requirement. Chart 1 shows this to represent 82% of the heating season.

Balance Point No. 3

The first stage 4-kw supplemental heater would cut in when outside temperature reached 29.5 F d.b., and would carry the structure load down to 18 F d.b. The 43,800 Btuh indicated by this point is 64.7% of the maximum requirement. Chart 1 shows this to represent 93% of the heating season.

Balance Point No. 4

The second stage 4-kw supplemental heater would cut in when outside temperature reached 18 F d.b., and would carry the structure load down to 6.2 F d.b. The 53,800 Btuh indicated by this point is 79.5% of the maximum requirement. Chart 1 shows this to represent 97% of the heating season.

Balance Point No. 5

The third stage 4-kw supplemental heater would cut in when outside temperature reached 6.2 F d.b., and would carry the structure load down to—5.6 F d.b. The 64,000 Btuh indicated by this point is 94.5% of the maximum requirement. Chart 1 shows this to represent 99% of the heating season.

Balance Point No. 6

The fourth stage 4-kw supplemental heater would cut in when outside temperature reached —5.6 F d.b., and would carry the structure load down to —18 F. This is below the —10 F design temperature and would provide reserve capacity for an unusual cold spell.

A summary of this information is provided in Table 1, which shows what portion of the heating season would be carried by the various heating components of heat pump Unit B.

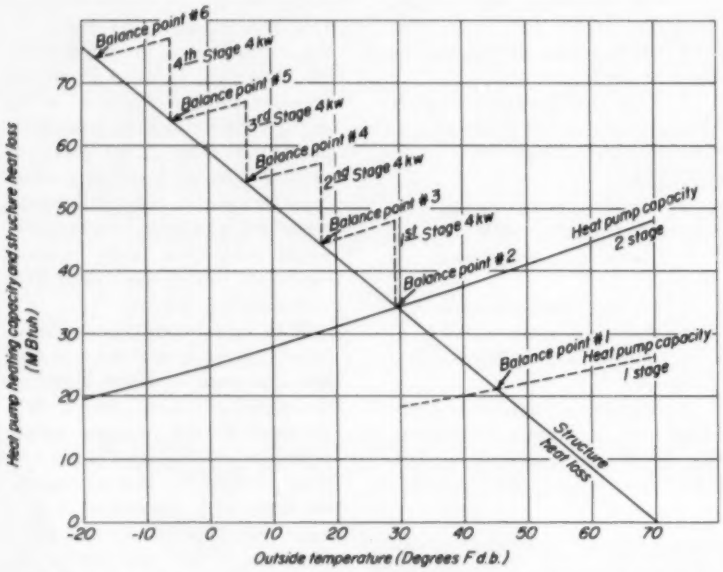


CHART 2 — Heat pump capacity plotted against structure heat loss to show balance points of the six steps of heating capacity available.

Heating components operating				% of heating season
Heat pump		Supplemental heaters		
1 Stage		None		50%
2 Stages		None	82% - 50% =	32%
2 Stages	plus	4 kw	93% - 82% =	11%
2 Stages	plus	8 kw	97% - 93% =	4%
2 Stages	plus	12 kw	99% - 97% =	2%
2 Stages	plus	16 kw	100% - 99% =	1%
			Total	100%

TABLE 1 — Summary of the information on heating capacity, showing what portion of the heating season would be carried by each heating component.



Friendly Symbol of Fresh, New Service: Look for UCON IKE !

UCON IKE stands for America's newest refrigerants—top-quality UCON Brand Refrigerants. *Plus* a brand-new approach to service . . . backed by a published marketing policy.

You'll like the people who make this policy work for you. They're friendly, competent, imaginative people, who know and care about your problems.

The service they provide is what makes the *real* difference in refrigerants!

UCON Refrigerants: 5 top-quality grades; full range of unit sizes; color-coded at the top; personalized service.

UCON Brand Refrigerants are manufactured by
UNION CARBIDE CHEMICALS COMPANY—Division of Union Carbide Corporation
30 East 42nd St., New York 17, N. Y.
Exclusive Sales Agent to Air Conditioning and Refrigeration Wholesalers
ANSUL CHEMICAL COMPANY, Marinette, Wisconsin

UCON and UNION CARBIDE are registered trade marks of Union Carbide Corporation

UNION CARBIDE product Ucon BRAND refrigerants — exclusive sales agent ANSUL

Circle No. 38 on Reader Service Card

2-IN-1 SYSTEM of refrigeration in Atlantic City's swank Empress Motel provides coolant at the proper temperature for both . . .



ICE RINK and AIR-CONDITIONING

ALMOST ANYTHING, it seems, is possible with refrigeration.

For example, at the swank Empress Motel in Atlantic City, N.J., the same cooling system that in summer air-conditions the establishment's 250 rooms supplies chilled brine for a 40 x 100′ ice skating rink which is one of the motel's chief attractions during the winter months.

The system was originally designed with separate coolers for supplying calcium chloride brine for the skating rink and chilled water to the fan-coil units for air-conditioning. These coolers were to be inter-connected to the same refrigeration compressors with an elaborate set of change-over valves and controls. This arrangement made the system not only complicated but costly.

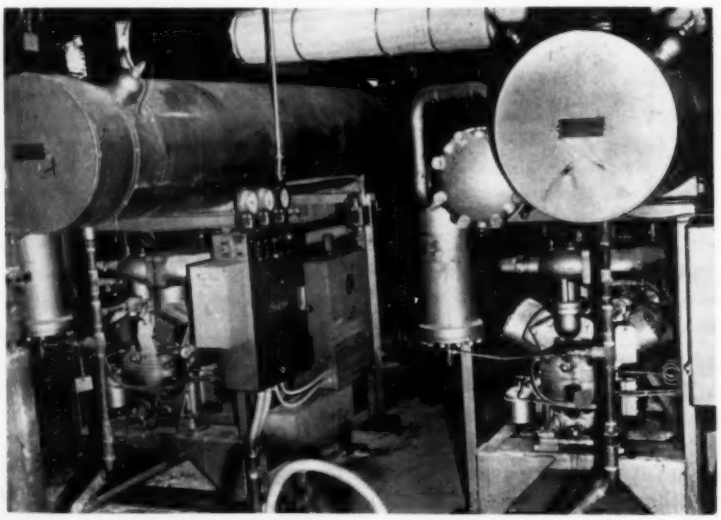
After carefully evaluating both installation costs and operating costs of this proposed system, Aires Co., field engineers for Acme Industries, Inc., came up with a suggestion for a less complex and less expensive system. In planning this new system they worked closely with Acme application engineers and the mechanical contractor on the job, Benjamin Labov & Sons.

The system they devised was built around two specially designed 50-ton combination packaged chillers, each inter-connected to a special cooling tower.

Each packaged unit has a direct-expansion cooler, which was developed for a wide variation in chilled liquid flow rate without excessive pressure drop at the higher rate. In fact, each chiller handles nearly 100% variation in flow rate, with the water flow amounting to approximately 66% of the total ethylene glycol brine flow rate.

The system uses a dual refrigerant feed control and a dual electric control panel. Each panel has its own temperature and pressure controls. One set maintains leaving water temperature just above freezing. The other set maintains leaving brine temperature well below the freezing point of water.

The system also includes an automatic change-over switch for the temperature and pressure controls. Two sets of signal lights in-



TWIN LIQUID CHILLERS of special design are located in a corner of the ground floor parking lot. Dual electric control panels cool both water and brine to proper temperature.

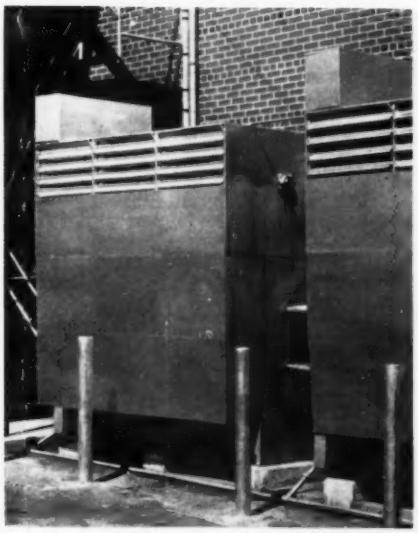
dicate open safety limit switches, one set for chilled water and the other for brine. Two safety lights show whether the unit is working on the brine system or on the chilled water system. A discharge-line oil separator is included, and a pressure control mounted on the chiller framework keeps head pressure by modulating air flow through the cooling towers during cold weather.

System Capacity Varies

The chillers required head pressure control, because the towers work at full capacity during the air-conditioning season and at only 50% capacity during the ice skating season.

The motel was built on stilts with the ground floor serving as a parking lot. The boiler and equipment room is in one corner of the parking lot, which is just beneath the shallow part of the motel's swimming pool. The refrigeration equipment and cooling towers are located in the equipment room.

The second floor actually is the ground floor of the motel where the rink, pool, and lounges are located. The rink is made of steel pipes embedded in a concrete slab, and is used as a dance floor and veranda during the summer.



SPECIAL COOLING TOWERS tied in with liquid chillers complete the system.



COLD PLATE fastened to roof of truck body keeps flowers fresh during delivery. Flower containers are hooked to heavy wire screen.

CONDENSING UNIT of refrigerated florist truck is mounted alongside driver's seat. It is plugged into shop current at night.



Cooled Trucks Boost Florist's Business

TRUCK REFRIGERATION was a costly investment, but it has paid off for Vic Cole, Miami, Fla., florist. Cole has been making refrigerated deliveries since 1952 and since that time has grown from one of the smallest to one of the largest florists in Miami.

Keeping flowers fresh while they are being delivered is a problem for florists everywhere. Cole buys flowers from as far away as Colorado and California, yet thanks to refrigeration he receives them in perfect condition. But often the flowers would wilt during the time it took him to deliver them. Result: a continuing stream of customer complaints.

So, Cole decided to equip his own trucks with refrigeration. Now his customers no longer complain about wilted flowers. "Maybe they are unaware of our refrigerated deliveries, but they know the flowers they receive are perfectly fresh," Cole says.

"Before refrigeration, temperatures inside the trucks climbed as high as 125 F. Even the freshest rose would wilt enough during delivery to make a customer unhappy.

"While original expense is high, our refrigerated trucks have cost little to keep up," Cole points out. "And much of the cost is offset by savings in time and mileage. Without refrigeration our delivery trucks had to keep doubling back to the shop, because some flowers would wilt before all of the deliveries in a particular area could be made. Now with refrigeration, a truck is loaded with all of the orders for one side of town. The truck can stay out as long as a half a day making up to 25 deliveries."

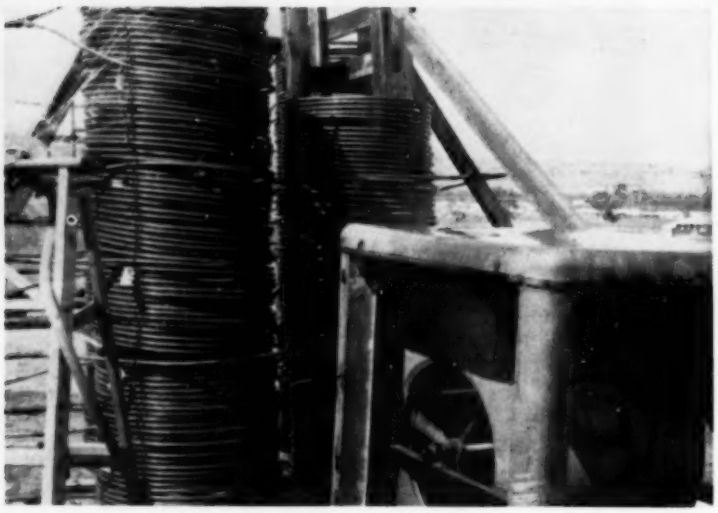
Each insulated truck is equipped with a cold plate which is charged each night by plugging in the 1/3-hp motor to an electric outlet provided in the parking area. This charge keeps the truck cold all of the next day.

The motor and compressor are mounted alongside the driver's seat, and refrigerant lines run to the cold plate in the top of the truck. Flower arrangements are placed in special containers hooked to the heavy wire screen which lines the sides of the truck.

Cole is satisfied that he has an extra selling point not only with his local trade, but also with the nationwide Florist's Telegraph Delivery. Many florists with the national group prefer to place their orders through Cole, because of his refrigerated delivery trucks.

COMMERCIAL REFRIGERATION *Sales News*

Homemade Condensers Help Market Open on Time



WITHOUT REFRIGERATION for its display cases, the opening of a new super market doesn't mean much. Glantz Refrigeration Co., Billings, Mont., was faced with this situation when shortly before the opening date of a new super market, the air cooled condensers had not been delivered.

The new store had advertised and promoted its opening date too thoroughly to change it, and Glantz had to figure a way to put 17 display cases into operation without the condensers.

Glantz spent about 16 hours developing homemade natural draft evaporative condensers. 50′ coils of ⅝ and ¾″ tubing in various quantities per circuit were stacked up on an improvised wood frame with the tubes approximately 1″ apart.

To obtain the necessary efficiency, the water was sprayed over the tube bundle with a garden spray. When the temperature rose to 95 F, and the humidity was unusually high Glantz improvised a forced draft situation by using an old evaporative cooler blower section.

The forced draft system was only necessary for one day. The humidity in the Billings area is usually low enough so that evaporative type cooling without forced draft did the job.

The system was in operation for an entire week. The changeover to the factory built air cooled condensers was accomplished without disrupting service in the super market.

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7 MORE JOIN NCRSA RANKS

Seven new distributor members have been added to the roster of National Commercial Refrigerator Sales Association.

The new members include: Acme Refrigeration, Inc., Indianapolis, Inc.; Charleston Refrigeration & Store Equipment Co., Charleston, W. Va.; Hunter Refrigeration Co., San Diego, Calif.; National Market Equipment Co., Madison Heights, Mich.; Newman Store Planning Service, Omaha, Neb.; Shepler Refrigeration, Inc., Portland, Ore.; Tate Distributing Co., Cape Girardeau, Mo.

YOUR WHOLESALER CAN SERVE YOU—LET HIM!

DISTRIBUTORS GET PLUG IN FOOD TRADE ADS

The importance of commercial refrigeration distributors to food store customers is being highlighted in many manufacturers' current advertisements in the food trade papers. The ads point out the services and other functions the distributor performs for the customer.

Through National Commercial Refrigerator Sales Association members of the joint relations committee, the NCRSA board of directors recommended that the manufacturers mention in their advertisements the fact that their products are sold through distributors.

The board unanimously adopted a resolution on advertising the important and indispensable services of distributors. This was presented to the joint relations committee.

NCRSA reports this to be the start of a comprehensive educational effort to impress upon independents, voluntary chains and cooperatives the importance of their local distributors of commercial refrigeration and food store fixtures.

NCRSA MEMBERS REPORT SALES INCREASE OF 19%

National Commercial Refrigerator Sales Association has reported that members participating in the quarterly report showed an average increase of 19% of total dollar sales for the first quarter of 1959 over the same period for 1958. Following are the average percentages for all NCRSA members reporting.

	Increase %
Total Dollar Sales 1st Quarter 1959	19.30
Dollar Net Profit Before Taxes	12.50
Inventory (March 31)	7.59
Accounts Receivable (March 31)	6.54

UPRIGHT STYLE CHANGED

A new roller-type bottle shelf and a redesigned release gate are changes now being included in upright coin operated selective bottle venders produced by La Crosse Cooler Co.

These units deliver exactly what they promise

"We selected Krack units for the 'Centrella' refrigeration system because they produce at rated capacities. We can design to specifications without fear of underestimating performance."

—A. W. Theis, Theis Refrigeration, Chicago

PURE Centrella FOODS

KRACK SPECIFIED

Central Grocers Cooperative's new, ultra-modern warehouse in Franklin Park, Illinois serves 400 "Centrella Foods" member grocers daily in a 4-state area. Frozen foods, meats, and dairy products are kept in fresh condition in 23,000 sq. ft. of refrigerated space served by 14 KRACK unit coolers.

The accurate capacity ratings of *all* Krack equipment give you these advantages:

1 *No need to specify "oversize" equipment*

When you select Krack equipment, you do not need to include costly "safety margins" in your estimate to compensate for uncertain performance. You can be sure that Krack units will deliver their full rated capacities.

2 *Get the "jump" in competitive bidding*

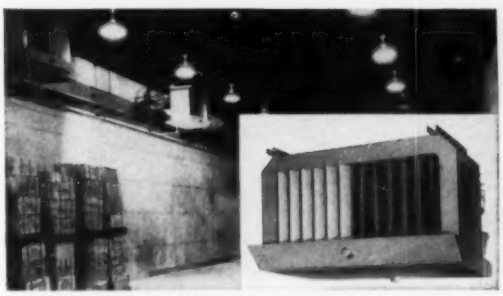
By specifying the right equipment for each job, you trim the "fat" off of both original equipment and installation costs . . . and consistently bid lower on all jobs.

3 *Save yourself installation headaches*

With Krack job-rated equipment you can complete more installations smoothly without hitches. Installations go faster . . . save you time and money.

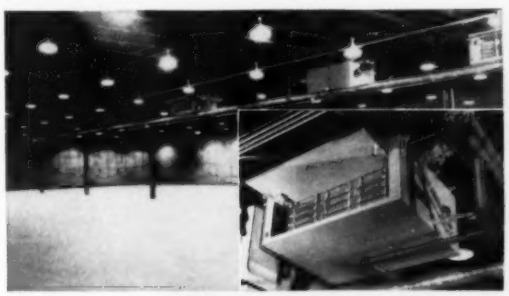
4 *Eliminate costly callbacks*

Krack equipment will give less maintenance trouble than equipment which is not really rated for the job it has to perform. Specifying Krack equipment is a good way to retain priceless customer good will!



Cools at controlled humidity

6 Krack Ceiling Mounted Unit Coolers chill temperature in cooler room to 40° F. for controlled humidity cooling. Dual purpose drain pan catches drip from expansion valve and directs air flow forward and upward for correct air distribution.



Goodbye to ceiling frost

Krack Electric Defrost Unit Coolers keep temperatures in storage freezer room at 0°F. Heat is circulated *within* unit . . . is *not* released into room to create ceiling frost. For defrosting cycle, door automatically shuts, sealing interior of insulated unit. Automatic defrost is accomplished in a cycle sequence without shutdown of the entire system.

KRACK REFRIGERATION APPLIANCES, INC

Manufacturers of freon, ammonia, flooded ammonia heat transfer equipment

MAIL COUPON FOR FREE BULLETINS CC-159 ED-1055

REFRIGERATION APPLIANCES, Inc., 905 Lake St., Chicago 7, Illinois
Send free bulletins giving all technical details.

Name_____

Firm_____

Address_____

City_____ Zone____ State_____



9570

Circle No. 27 on Reader Service Card

SLIME AND ALGAE

Continued from Page 43

and organic matter. It also includes may bacteria, and the seeds and spores of plants. Among these are the slime-forming bacteria and the spores of algae. Good housekeeping of the system, including regular maintenance cleanings, can help prevent or minimize the development of slime and algae.

When indications of slime or algae formation are noted, Sussman cautions, the operator of the refrigeration or air-conditioning equipment should contact a water treatment company promptly. If this condition is noted by a serviceman on one of his calls, he should advise the owner of the system that water treatment is needed.

First thing to do is clean the equipment thoroughly, at least those portions that are readily accessible. This cleaning should include draining and flushing of the equipment, and removal of as much visible slime as possible, either by scrubbing or by use of a high-pressure stream of water or steam. Second, when the equipment is refilled, slimicidal chemicals should be added to the water.

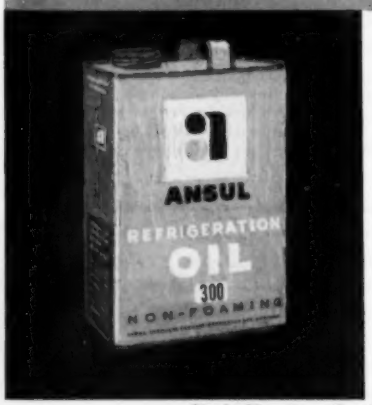
Various considerations, such as the avoidance of odors in air washers, will guide the water treatment specialist in the selection of the proper chemical to use. If the slime resists the original treatment, as often happens, then a larger dosage or a different chemical should be used.

Also, it is not unusual for the slime-forming bacteria to be killed or at least adequately controlled by the initial treatment, only to grow again suddenly at a later date, even in the presence of the chemical that had originally controlled it. When such a condition develops, of course, a change in the water treatment is necessary.

By working together, the operator of the equipment and the water treatment company can develop a combined program of maintenance cleaning and chemical treatment for slime control. Usually this will require rather frequent cleanings at first, but the interval between cleanings can be gradually increased. If frequent chemical treatment is needed, the operator may be instructed to add the required amount at specified intervals.

For severe slime conditions, says Sussman, it may be necessary to sterilize the system as it is cleaned. Details of this operation can be provided by the water treatment company when required.

ANSUL OIL is easy to get along with. For 10 years, it has proved itself pleasantly compatible with all refrigerants, especially the fluorinated ones. Needless to say, Ansul Oil is highly-refined with an extremely dry personality. Non-foaming Ansul Oil stays put in the compressor, right where it belongs. Wax-free, it can't plug capillaries or cause sticky expansion valves. And the remarkable stability of Ansul Oil under extreme operating conditions means longer life for all moving parts. Ansul Oil can lend a hand in eliminating many of the conditions that cause costly system breakdowns. ANSUL CHEMICAL COMPANY, MARINETTE, WISCONSIN



ANSUL

REFRIGERATION PRODUCTS
FIRE FIGHTING EQUIPMENT
INDUSTRIAL CHEMICALS

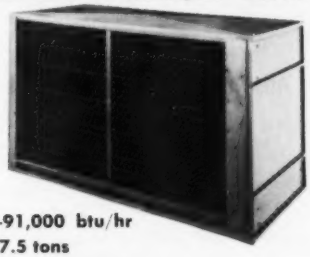
Circle No. 40 on Reader Service Card

MOBILE TRAILER SHOWS AAF SCHOOL EQUIPMENT

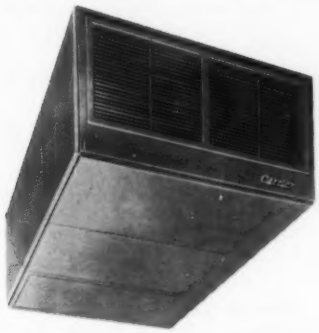
A highly-mobile, all-aluminum trailer is being used by Herman Nelson Unit Ventilator Products Div., American Air Filter Co., for comparison showings of school heating, ventilating, and air-conditioning equipment before school boards, architects, and consulting engineers in the eastern States.

The 16′ trailer contains the firm's latest classroom unit ventilators and/or air-conditioning units, cabinets, and accessories.

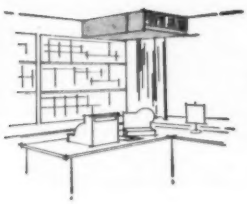
OUTDOOR SECTION includes a compressor, coil, fan and electrical control panel all in a weatherproof cabinet.



Capacities: heating—91,000 btu/hr
cooling—7.5 tons

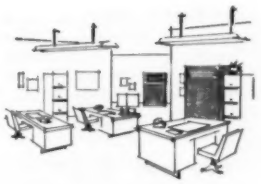


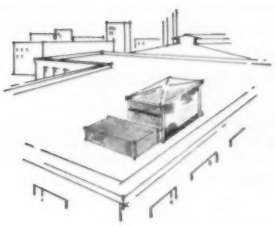
INDOOR SECTION includes fan and fan motor, heating-cooling coil, filters and one 11.4-kw strip heater assembly with its own overload protection. Accessory thermostat provides for automatic or manual change-over from heating to cooling.



One unit can completely air condition a small store, shop or office suite.

Multiple installations provide zone control for the largest buildings.





Completely weatherproofed, both units can be safely installed outdoors.

Carrier scores again with this

versatile new air-cooled Heat Pump Weathermaker

for business and industry!

Here's the latest in the Carrier line of heat pumps—the new 64D8 air-cooled Weathermaker*. This new model fills the need of commerce and industry for a heat pump that combines compactness, versatility of application and attractive appearance. Under many conditions, it offers an economical solution for heating and cooling even in colder climates!

A single 64D8 will provide efficient year-round air conditioning for a small store or office. In multiples, it can provide excellent zone control even in the largest buildings. The versatile indoor section may be suspended horizontally or vertically. Vertically it may be hung from a wall or stand on the floor. It may be used with ductwork or with a plenum. Where floor and wall space are limited, it may even be installed outdoors.

Some of the ways a 64D8 can be used are shown here. There are many more. For the complete picture, call your Carrier dealer listed in the Yellow Pages. Or write Carrier Corporation, Syracuse 1, New York.

*Reg. U.S. Pat. Off.

MORE PROOF OF
BETTER AIR CONDITIONING FOR EVERYBODY EVERYWHERE

Carrier

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Circle No. 46 on Reader Service Card

LA CROSSE QUALITY
LEADS THEM ALL!

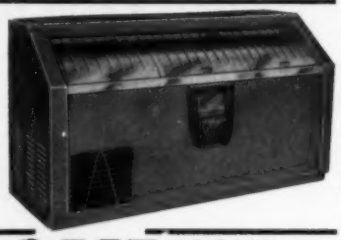


THE NEW
FLAKE KING

Here's the newest leader in the complete line from La Crosse . . . the new automatic FLAKE KING. Produces 550 lb. of hard dry ice every 24 hours . . . storage capacities of 280 lb. to 470 lb. . . . grey, hammertone baked enamel finish, stainless steel storage bin and door . . . minimum of floor space . . . economical operation all the way!

THE NEW
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Up to 45% greater capacity than ever before . . . 6'6" model, with coil only, holds 40 cases!

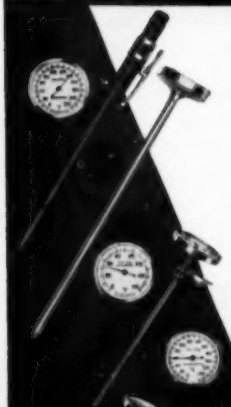


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TEL-TRU
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All Popular Dial Ranges
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POCKET TYPE, Model PT50, Service Man's Spot Check. Dial diam. 1", Stem 5" Long. — Hard Rubber Pocket Case.

GENERAL TYPE, Model GT-100, Dial diam. 1¾", Stem 8" Long. Adjustable Vessel Clasp and Preset Indicator for Marking Temperature.

THREAD TYPE, Model GT-200, Standard ⅛" NPT. Stainless Steel Connection Nut. Standard Stem Lengths: 2½", 4", 5", 6", 8", 10", 12", Measurements Include Thread.

Stem diameters .140" and .150"

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Subsidiary of Germanow-Simon Machine Co., Inc.

Circle No. 43 on Reader Service Card

USEFUL *Literature*

HIGH-SPEED SYNCHRONOUS MOTORS are described in text and illustrations in a new bulletin (GEA-6814) published by General Electric. Gives design features, construction and applications of constant speed motors for commercial and industrial use. Illustrations show manufacturing techniques and typical installations.

Circle No. 91 on Reader Service Card

THE TOUGHEST masonry materials are no match for Selfdril, according to catalog information from Star Expansion Industries Corp. The product, a combination anchor-drill with eight sharp cutting teeth, is described in full. Included is installation data for setting by hand or with air or electric impact hammers.

Circle No. 92 on Reader Service Card

4 GOOD REASONS for using Torit dust control equipment are listed in new literature published by Torit Mfg. Co. Shows how one or a combination of the company's 8 cyclone separators can protect machinery investment, product quality, employee health, and reduce maintenance costs with effective dust control in a range of applications. Also includes multiple rating tables, complete specifications, and a dimensional drawing.

Circle No. 93 on Reader Service Card

MOVING AIR through ducts is the subject of Bulletin A-11 4A published by Hartzell Propeller Fan Co. Describes a new line of belt-drive duct fans. Also gives dimensions, performance data and construction details on direct-drive fans.

Circle No. 94 on Reader Service Card

HOW TO REDUCE your ice cream food and labor costs is the title of a 24-page booklet published by Sweden Freezer Mfg. Co. Tells how to build ice cream business at a profit by cutting the high costs in retail handling. Also contains recipes for popular ice cream dishes with a cost analysis on each item, and stresses the use of ice cream products as desserts.

Circle No. 95 on Reader Service Card

CLEANING AND FILTERING of refrigeration systems is detailed in Folder A-12 published by McIntire Co. Outlines 6 point procedure for cleaning refrigeration systems after hermetic burnouts, before installing new or re-built motor compressor. Also lists data on low side filtration, plus dimensional information and ratings of the company's line of filters.

Circle No. 96 on Reader Service Card

DIFFERENT WAYS to use its countless line of industrial spray nozzles are described in 32-page Wm. Steinen Mfg. Co. catalog. Specific data on spray angles, dimensions, types of connections, and capacity vs. pressure for all standard nozzles are given in time-saving selection tables.

Circle No. 97 on Reader Service Card

LEARN HOW TO GET more heating or cooling without rebalancing the rest of the system. Literature from Viking Air Products explains firm's exclusive principle of increasing air delivery by speeding up only a portion of the air in the duct. Step-by-step illustrations are included.

Circle No. 98 on Reader Service Card

ELECTRIC MOTORS AND BLOWERS widely used in refrigeration and air-conditioning are listed in a new catalog published by Redmond Co., Inc. Features fractional horsepower electric motors and blowers. Each section includes photographs, drawings, description and specifications.

Circle No. 99 on Reader Service Card

(More Useful Literature on page 62)



...when refrigerants never rest

Constant temperature and humidity *around the clock every day in the year*—that's what it takes to keep electronic "brains" alert. And that's what Philadelphia's First Pennsylvania Banking and Trust Company called for when they planned to take advantage of modern automatic check-handling equipment. These sensitive devices . . . located in an office space totalling 3200 square feet . . . must be kept in a controlled atmosphere near 72°F. and 50% relative humidity even during week-ends and other non-operative periods.

For this critical job, York Corporation installed two 60-ton air conditioning and water cooling systems. Their refrigerant choice—Pennsalt Isotron 12. Now in its second year of trouble-free operation, this system . . . working in the face of loads that constantly vary from zero to full . . . has successfully maintained the exact conditions required.

York's system for the remainder of the building, two 250-ton units that handle 200,000 CFM, uses Isotron refrigerant 11, and gives equally superior performance.

Isotron refrigerants' extra purity, extra dryness and rugged stability have now made them York's choice. Be sure you get the same dependability—specify Isotron. Isotron Dept. 273, Pennsalt Chemicals Corporation, Three Penn Center, Philadelphia 2, Pa.



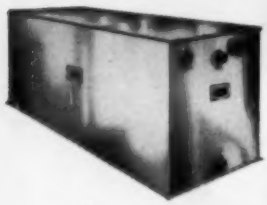
Pennsalt Chemicals
ESTABLISHED 1850

ISOTRON
THE KEY TO MODERN LIVING

Circle No. 44 on Reader Service Card

Circle No. 45 on Reader Service Card

DEPENDABLE, ECONOMICAL PRODUCT COOLING*



Ice-Cel ACCUMULATORS

- FOR DAIRIES
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* Stored cooling capacity for high peak chilling requirements.

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Dole Refrigerating Products Limited, Oakville, Ontario, Canada

Write for Engineering Catalog BPE.

"THE STORAGE BATTERY OF REFRIGERATION"

DOLE THE *Ice* LINE

USEFUL LITERATURE

Continued from page 60

HOW THE DESIGN of a centrifugal pump can provide better service in an air-conditioning system is the theme of a new bulletin (No. 2000-B3) released by Worthington Corp. The bulletin describes how to select the proper pump for air-conditioning systems.

Circle No. 100 on Reader Service Card

SIMPLICITY OF OPERATION is offered readers of a new 160-page product bulletin (249-A) which describes "Rollotron" electronic air cleaners. Published by American Air Filter Co., Inc., the bulletin includes details of operation and electronic principle, an explanation of the agglomerator and storage sections, equipment drawings, capacity and dimension tables, and specifications. A list of typical installations and a description of the horizontal version of the unit is also included.

Circle No. 101 on Reader Service Card

"TAP/TRAP" is the title of a folder published by Wolverine Tube, Div., Calumet & Hecla, Inc. The folder describes in detail the company's one-piece, leak-proof, ready-to-use air chamber. Lists features and applications plus proper installation of the units.

Circle No. 102 on Reader Service Card

WANT TO KNOW MORE about condensate drainage control systems? Then you should be interested in a colorful folder (6001-B) published by Cochrane Corp. Describes the company's condensate drainage control system with jet action. Tells the principles of operation of the system and describes its application and advantages in various industries.

Circle No. 103 on Reader Service Card

Why try to kill algae like this...



USE CALGON® ALGAECIDE

Calgon's Algaecide kills slime and algae fast — helps keep cooling water system operating at top efficiency. Get a supply from your Refrigeration Wholesaler today.

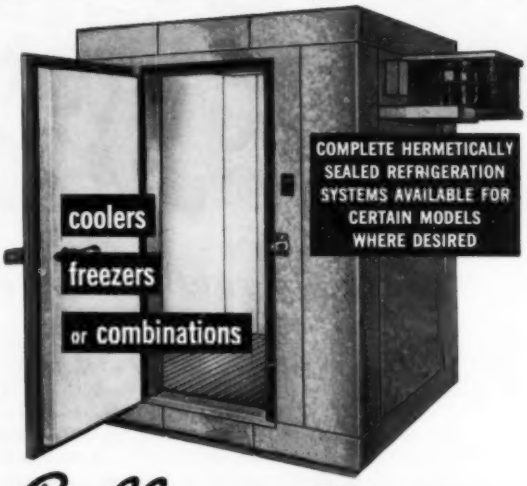


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REFRIGERATION CONTRACTORS: Special franchise available with big sales possibilities to everyone who sells or serves food, including clubs, schools, churches and farms. No need to maintain inventory. Sell from catalogs. Factory Layout and Engineering Service available at no cost.

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Get details—write Dept. RAC-9 for FREE book.

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Type 1609-13 with knob adjustment, desirable where temperature settings may be made frequently as on Ice Cream Cabinets, Soda Fountains, Beverage Coolers, etc. Range—20 to +50° F., Adj. Diff. 3 to 25°, 5 ft. capillary with 5¼ x ⅜ inch bulb. Other types available to cover ranges from −20 to +75° F. with capillary lengths up to 20 ft.

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"They know what I'm up against on refrigeration installations. That's why they make quality controls—engineered to *prevent* costly callbacks. For my money, it's White-Rodgers every time!"

WHITE-RODGERS CONTROLS, with exclusive Hydraulic-Action are unequaled for remote temperature control of commercial and industrial refrigeration. Unaffected by ambient temperature or atmospheric pressure . . . rugged switches with oversize silver contacts, and enclosed against dirt, and vermin. These features "out guess" trouble . . . prevent it from happening.

WHITE-RODGERS

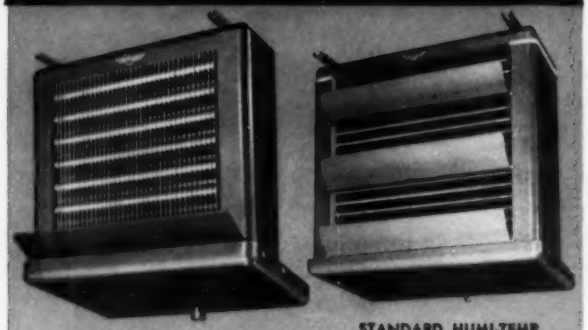
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LARKIN



STANDARD HUMI-TEMP

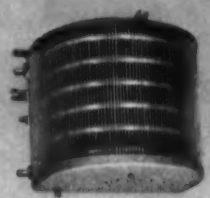
LOW TEMPERATURE
HUMI-TEMP UNITS — HOT GAS
OR ELECTRIC AUTOMATIC DEFROST





MULLION
HUMI-TEMP
STANDARD OR LOW TEMPERATURE
WITH HOT GAS DEFROST

WALL HUMI-TEMP UNITS
STANDARD OR LOW TEMPERATURE
WITH HOT GAS DEFROST



BANTAM HUMI-TEMP



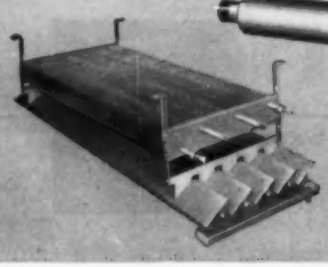
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HALF TURRET OR
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HEAT EXCHANGERS

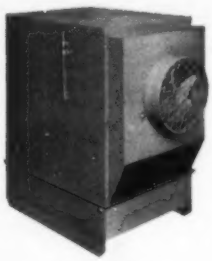


BAFFLE
COOLER COILS

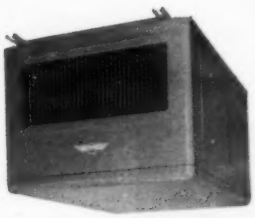
the complete quality line of refrigeration and air conditioning equipment



ZEPHYRCON AIR COOLED
CONDENSERS



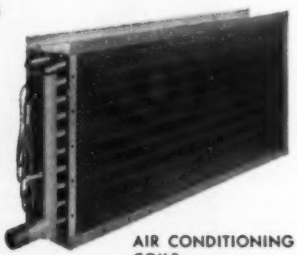
WATER SAVER
COOLING TOWERS



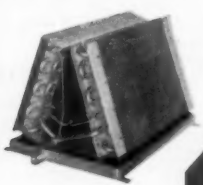
AIR CONDITIONING UNITS



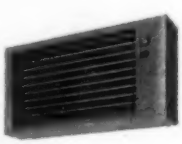
DIRECT EXPANSION
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Circle No. 48 on Reader Service Card

NEW Products

Ice Machine

Product: "Flake King" Automatic ice machine.

Manufacturer: La Crosse Cooler Co., La Crosse, Wis.

Features: Auger-type production system will manufacture about 550 lbs. every 24 hours. Two size storage bins are available; one with



a capacity of approximately 280 lbs., another will accommodate about 470 lbs. Both bins are stainless steel and located at convenient working height. Both models measure 28″ deep, 70″ high. Bin of the smaller size is 24″ wide, larger is 36″. Exterior is finished in grey baked enamel with decorative chrome trim.

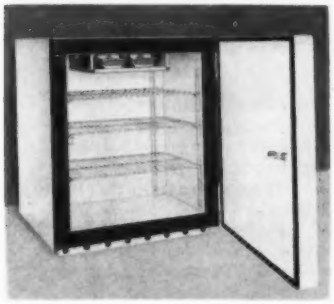
Circle No. 136 on Reader Service Card

Freezing, Cooling Units

Product: Small-scale twin freezer and refrigerator (Models 5X, RI-5-IM).

Manufacturer: Nor-Lake, Inc., Hudson, Wis.

Features: Matching units in near-cube shape. Offers 5.17 cu.ft. of unobstructed capacity. Can be stacked, placed under a counter or laid side-by-side at reach-in height. Can be used for various applications



in all types of institutions and commercial places, for auxiliary or full-time refrigeration requirements. White baked enamel finish, stainless steel also available. Embossed aluminum interiors and chrome plated hardware. Freezer operates on cold wall principle, has a 1/5 hp compressor and four storage areas. Refrigerator features a two-tray ice cube maker-evaporator, with a 1/8 hp compressor. Both units have adjustable controls and three adjustable plated wire shelves. Each unit measures 23″ high, 27″ wide, 27½″ deep.

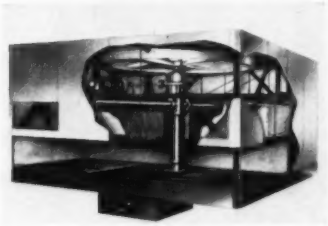
Circle No. 137 on Reader Service Card

Cooling Towers

Product: Line of large capacity cooling towers.

Manufacturer: Carrier Corp., Syracuse, N. Y.

Features: Towers are smaller and weigh less than other models of similar capacity. Flat, almost totally enclosed sides permit blending the tower with building exterior. Oper-



ating weight of some models is 60% under that of conventional towers. Fill, made of pressed wood fibers, allows water to evaporate, thus carrying heat more effectively. Eliminator sheets attached to sprinkler prevent drifting of unevaporated water droplets to the atmosphere. Routine inspection and maintenance is performed from within the tower. Produced in nine sizes between 170 and 500 tons cooling capacity. Larger tonnages can be handled by multi-cell arrangements.

Circle No. 138 on Reader Service Card

Duct Heaters

Product: "Comfort-Aire" electric duct heaters.

Manufacturer: Heat Controller, Inc., Jackson, Mich.

Features: Primarily for use with the company's line of package air-conditioners and heat pumps as air duct heaters and supplementary electric heating of all sizes. Self-contained and factory pre-wired. Two stage heating on two heater circuits in insulated cabinet with duct flanges. Terminal board for outdoor thermostat connection. All terminals located outside the heat zone. Snap-action thermal cutout automatically resets itself. Heating elements have secondary high limit link fuse on each circuit.

Circle No. 139 on Reader Service Card

Capillary Tube

Product: "Strain-O-Kap Sr." strainer capillary combination.

Manufacturer: Watsco, Inc., Hialeah, Fla.

Features: Designed for use in all units ranging from 1/3 to 1 hp, using R-12 or R-22. Applies to low,



medium or high temperature systems. One tube can be adapted to any one of approximately 26 applications without changing the tube length. Strainer inlet has a ⅜″ sweat connection, but incorporates a reducer bushing, which when inserted, can reduce the connection to 5/16″ or even to ¼″. 1 hp capacity strainer is spun from hard drawn copper tubing and contains 3 monel mesh screens for three stage straining action.

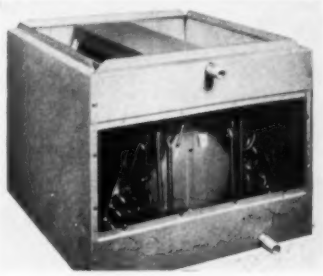
Circle No. 140 on Reader Service Card

Evaporators

Product: Line of residential evaporators (Type BAV).

Manufacturer: Bohn Aluminum and Brass Corp., Betz Div., Danville, Ill.

Features: Equipped with two drain pans for mounting either above the furnace or below in a counterflow installation. Cabinets are heavy-gauge bonderized steel finished in grey hammertone enamel. Large access panel for inspection and servicing. Knockouts at four locations for flexibility in bringing out lines;



and room inside for the expansion valve. Line includes five models ranging in capacity from 24,800 to 89,200 Btu per hour.

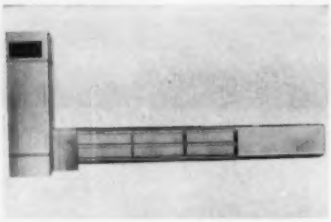
Circle No. 141 on Reader Service Card

Schoolroom Heater

Product: Line of schoolroom heating, ventilating, and cooling systems.

Manufacturer: Janitrol Heating and Air Conditioning Div., Surface Combustion Corp., Columbus, Ohio.

Features: Self-contained, individual room heating and ventilating



system. Includes perimeter-type, draft-free, air distribution. Cooling available as an option. System has counterflow gas-fired unit, which is enclosed in floor-to-ceiling metal cabinet; and includes wall duct sections that are attached to exposed walls and discharge the air in a draft-free vertical pattern. Duct sections, which hang from wall, can provide extra storage space by including matching shelf sections. Fresh air modulating damper, automatically actuated, assures fresh air blending without sudden temperature fluctuation. Control system is balanced for optimum performance and is factory wired. Heating section is approved for all types of gases.

Circle No. 142 on Reader Service Card

Dehumidifier

Product: Dehumidifier (Model KSD-32).

Manufacturer: Kelvinator Water Coolers, Columbus, Ohio.

Features: Complete with built-in humidistat, removes up to 4 gals.



of water waste every day from areas totaling up to 14,000 cu.ft. White and gray vinyl cabinet, silver anodized aluminum grille. 2 gal. capacity moisture container is lightweight and easy to empty. Entire unit weighs only 55 lbs., measures 23½" high, 12" wide, 14½" deep with receptor.

Circle No. 143 on Reader Service Card

Baseboard Unit

Product: Residential circulating hot water systems.

Manufacturer: International Oil Burner Co., Electric Heat Div., St. Louis, Mo.

Features: Requires no plumbing or piping. Sets against the wall. Can be installed to provide individual room zone control. Units are hermetically sealed so liquid need never be added, even while idle during –35 F weather. Fully protected against freezing.

Circle No. 144 on Reader Service Card

Air-conditioner

Product: "Remotaire" year-round horizontal air-conditioner (Type 30).

Manufacturer: American-Standard, New York, N. Y.

Features: Fan-coil unit for hotels, motels, and apartments. Designed for use with hot or chilled water in concealed overhead installa-

THE MOST! – in every department

That's the verdict of men who know water valves.

They like its wide range: One valve adjustable for both R-12 and R-22 without changing springs. Simply turn the knurled cap to any setting from 60 to 270 lbs. Cap can be easily removed and the setting made tamper proof when desirable.

They like the way it fits in: Small and compact, but with ample capacity, smooth modulation, excellent flow characteristics.

They like its quality construction: Monel seat beads that minimize wire drawing; direct acting leak proof bellows. They like the provision for manual flushing after installation to remove dirt and grit. Bulletin tells the story.



Nut provides for tamper proof setting when this is desirable.

Buy it from your wholesaler

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Division of Colorado Oil and Gas Corporation
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MARSH Refrigeration Instruments

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Circle No. 49 on Reader Service Card

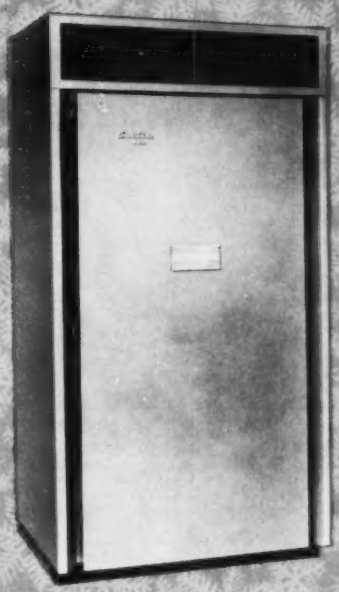
POCKET MORE PROFITS WITH

Curtis

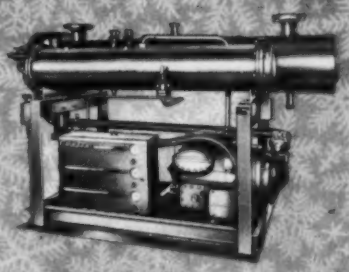
GOOD PROFIT MARGIN IN THE LUXURY LINE WITH "GOLDEN SILENCE" CIRCULATION"



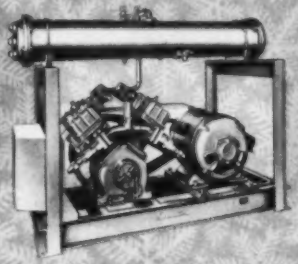
EVAPORATIVE CONDENSERS, COOLING TOWERS AND AIR HANDLING UNITS UP TO 100 TONS



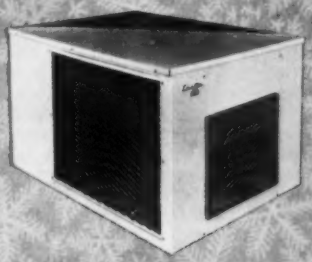
PACKAGED AIR CONDITIONING UNITS 3 THRU 100 TONS



PACKAGED LIQUID CHILLERS 7½ TO 100 TONS WITH SEMI-HERMETIC COMPRESSORS



CONDENSING UNITS UP TO 100 TONS—F-12 OR F-22



PACKAGED AIR COOLED SPLIT SYSTEMS THROUGH 10 TONS

All CURTIS air conditioning equipment is priced for profit—competitive prices on all units include a generous profit margin for you. Curtis "packaged" air conditioning equipment is all factory assembled and factory tested—it is easy to sell . . . easy to install.

THE BALANCED COMPONENTS in each CURTIS air conditioner assure a minimum of maintenance, quiet operation and maximum cooling efficiency.

Sell the nationally advertised line that sells itself.

Curtis

MANUFACTURING COMPANY
REFRIGERATION DIVISION

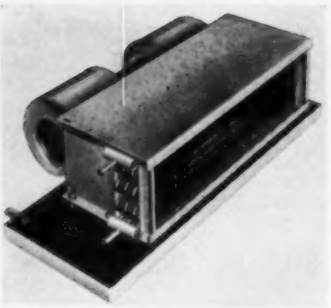
OUR 105th YEAR

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CURTIS AIR CONDITIONS AMERICA

C-77

Circle No. 50 on Reader Service Card



tions, such as in dropped ceilings or closets. Fan load and motor speed are matched for best performance. Drain pan design offers positive sweat connection. Eliminates metal to metal contact between pan and the bottom of coil. No auxiliary drain pan is necessary.

Circle No. 145 on Reader Service Card

Aluminum Nameplates

Product: Color-fast anodized aluminum nameplates.

Manufacturer: Allied Decals Inc., Cleveland, Ohio.

Features: Ideal as attractive window decal for prestige-building advertisement. Also applicable for use on all types of equipment installed and serviced, for quick customer reference. Custom-made in all designs, sizes, and in one or more colors. Nameplates can be applied in seconds without need for rivets or fasteners. Available in various types of adhesives for fast and permanent application: press-on; and heat or solvent activated. Highly resistant to extreme temperatures and organic solvents. All copy design (printing) and colors are sealed into the anodized aluminum plates, eliminating undesirable raised or lowered surfaces. Will not tear or peel. Can be applied to any flat, curved or angular surface.

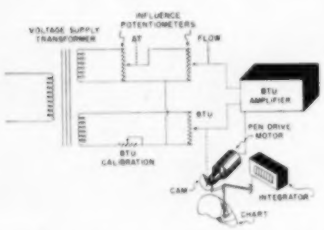
Circle No. 146 on Reader Service Card

Btu Meter

Product: Btu meter.

Manufacturer: Hays Corp., Michigan City, Ind.

Features: Designed for use in



measuring heat transfer in applications such as hot water generators, cooling towers, and refrigeration systems. Single recorder is used to continuously record, indicate, and integrate Btu loss or gain in a flowing liquid. Temperature differential and flow rate of the liquid are also recorded on the same chart.

Circle No. 147 on Reader Service Card

Split System

Product: Air-conditioning system for use with 8″ furnace line.

Manufacturer: Fraser & Johnston Co., San Francisco, Calif.

Features: Companion cooling coil and 1- ton remote condensing unit offer year-round air-conditioning when used with the company's 35,000



and 45,000 Btu furnaces. The furnaces are available in upflow and counterflow. Primarily designed for use in mobile homes, apartments, and motels.

Circle No. 148 on Reader Service Card

Central Control

Product: "Selectografic Supervisory DataCenter" miniaturized heating and air-conditioning control console.

Manufacturer: Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.

Features: Designed to enable a building engineer to remain seated while he monitors and adjusts tem-



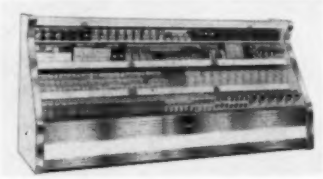
peratures in any area of a building, regardless of how large the building. Measures 4′ high, 2′ deep, and wide. Includes up to 35 pushbutton switches depending on number of systems to be controlled, a clock, temperature indicator and an intercommunications unit. 50-slide projector shows slides of system diagrams, floor plans and other building data. As a particular slide is switched on the screen, operating controls are simultaneously switched to the system represented on the slide. Special metal enclosures have been designed to provide space for additional equipment.

Circle No. 149 on Reader Service Card

Merchandiser

Product: Self-serve refrigerated merchandiser (Model 5600).

Manufacturer: Sherer-Gillett Co., Marshall, Mich.



Features: Available in full display lengths of 8 and 12′. Has four refrigerated shelves. Top of the case serves as a non-refrigerated display shelf for related items.

Circle No. 150 on Reader Service Card

Electrostatic Filter

Product: "Filtr-Aire" permanent, dry-type electrostatic air filter.

Manufacturer: Peden Equipment Co., Houston, Tex.

Features: Made of Saran-coated natural hair. Fire resistant. Can be cleaned by water washing. Controlled plastic coatings produce progressive filter loadings for longer effective filtration without substantial reduction of air-flow. Since the filter is a dry type, there is no viscous substance to get on equipment or personnel when removing or cleaning. One-piece aluminum frame with expanded copper-bearing galvanized metal lath holds media firmly in place. Available in a range of standard sizes in ½, 1 and 2″ thicknesses.

Circle No. 151 on Reader Service Card

Split System Heat Pump

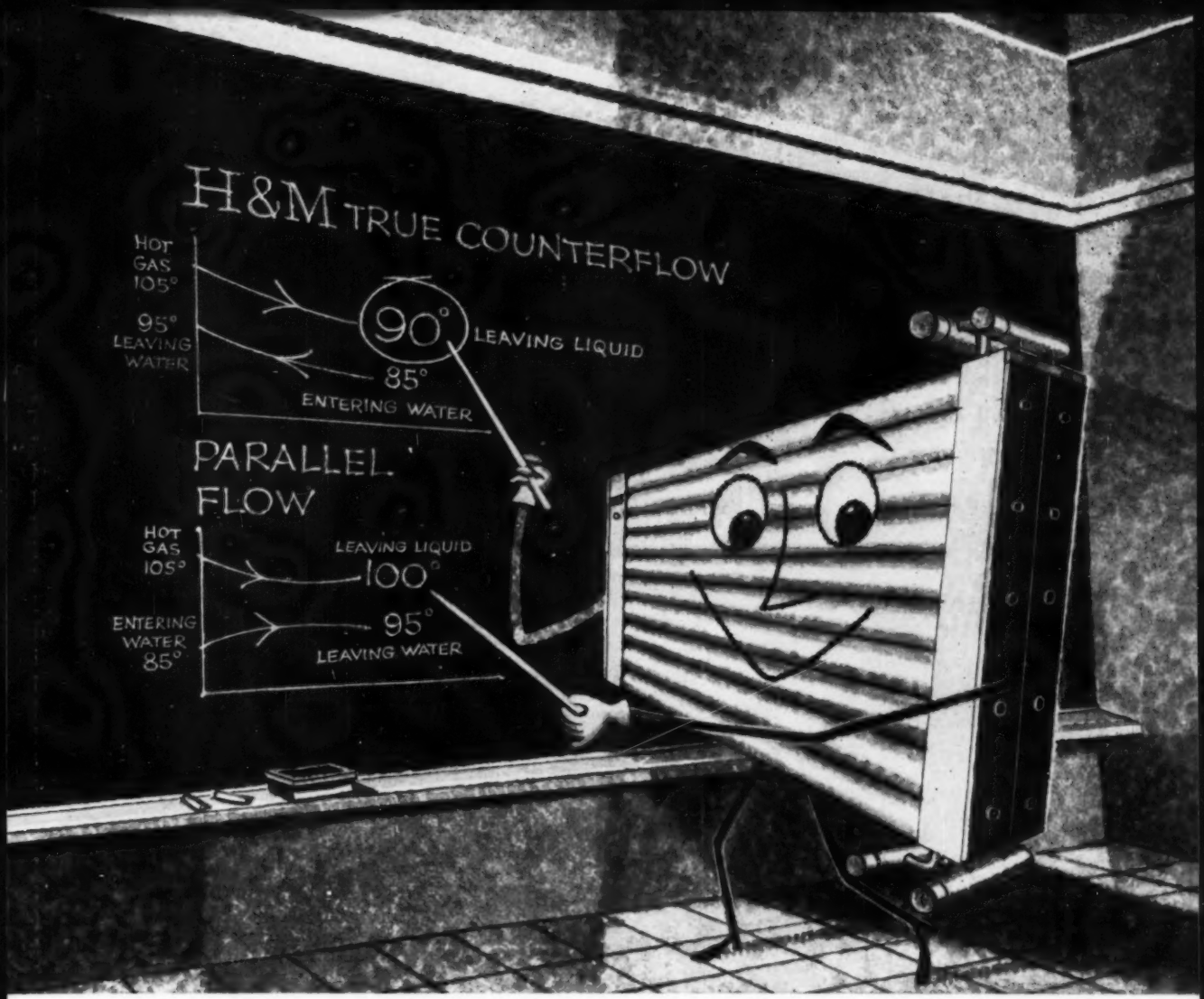
Product: 5-ton split system heat pump.

Manufacturer: General Electric Co., Tyler, Tex.

Features: Consists of weatherized outdoor remote unit, and in-



door air handling unit. Heats and cools without fuel or water. Air handler is designed to easily replace conventional heating systems. Uses a 115/230 volt blower motor for ease of application. Can be used for



BEFORE YOU BUY, THINK:

Will you get adequate subcooling from your condenser?

You will if it's an H&M water-cooled condenser with true counterflow heat exchange

In Halstead & Mitchell water-cooled condensers the refrigerant and cooling water are introduced in true counterflow, as shown in the chart. Test results indicate an average of 15 degrees of subcooling in H&M condensers. Liquid refrigerant leaves at a lower temperature and system capacity is increased about ½% for each degree of subcooling without additional power input.

H&M condensers feature double-tube design, seamless copper tubing, brass headers. End plates are easily removed for quick, safe, *mechanical* cleaning. Water tubes are generously sized for low pressure drop and minimum maintenance. Available in ½ to 25 ton capacities, condenser types are Standard (½" and ⅝" O.D. water tubes), Heavy Duty (⅝" O.D. water tubes), and Sea Water (⅝" O.D. cupro-nickel water tubes), and are U/L approved. Order them from your refrigeration wholesaler and use them singly or on racks. Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.



H&M WATER-COOLED CONDENSER WITH TRUE COUNTERFLOW

HM Halstead & Mitchell

Water-Cooled Condensers • Cooling Towers • Air-Cooled Condensers • Finned Coil Products

Circle No. 51 on Reader Service Card

upflow or downflow operation without the need for special kits or adaptors. Can also be used in cooling only applications. Condensing unit has a holding charge of R-22, factory-equipped with service valves and sight glass. Supplementary electric resistance heaters also available.
Circle No. 152 on Reader Service Card

Roof Ventilators

Product: Line of centrifugal power roof ventilators (Type L-CRF).

Manufacturer: Ilg Electric Ventilating Co., Chicago, Ill.

Features: Ventilating capacity



has been increased from 6970 to 11,000 cfm with the addition of 3 new models. Specially designed for high-capacity duct and flue exhaust applications. Low silhouette harmonizes with modern and old architecture. Durable weather-tight housing. Direct-connected fan drive. Permanently lubricated fan motor.
Circle No. 153 on Reader Service Card

Pipe Insulation

Product: Pre-molded rigid polyurethane pipe insulation.

Manufacturer: Baldwin-Hill Co., Trenton, N. J.

Features: Specifically designed for low temperature application



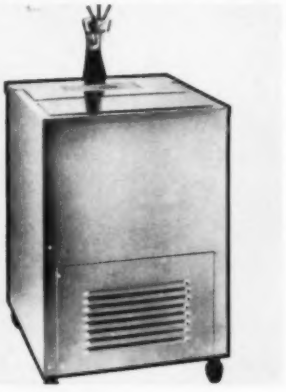
down to −300 F. At a mean temperature of zero F, it has a K factor of only .096 Btu per sq.ft., hr., degrees F. Formed of a mass of closed cells containing entrapped inert gas. Intended to insulate lines in continuous service between −300 and 250 F. For intermittent service or steam out its upper temperature range is 275 F. Can be applied to piping with ⅜ or ½" steel bands or tie wires and joints sealed with low temperature mastics. No special tools needed. Available in all standard sizes from ½ to 12" dia. Thicknesses range from ¾ to 2½" in ½" increments. Sections are 3' long.
Circle No. 154 on Reader Service Card

Drink Dispenser

Product: "Drinkmaker" soft drink dispenser.

Manufacturer: Council Mfg. Corp., Fort Smith, Ark.

Features: Measures only 24 x 24". Contains three syrup tanks. Tanks, interior, and exterior are stainless steel. Single riser head can be arranged to give carbonated or plain water drinks in any combina-



you can be sure of quality . . . craftsmanship with

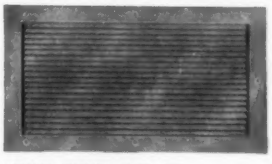
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AGITAIR registers and grilles are available in a wide range of sizes and styles to meet every requirement of the architect and designer.

Available in all aluminum, stainless steel, bronze, brass, standard steel and plated finishes. Finish thoroughly baked on hard. Will not chip. When you specify these AGITAIR units, you are specifying quality items.

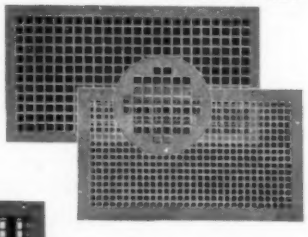


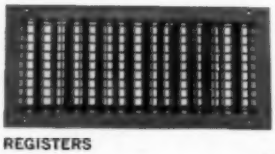
Ask your AGITAIR representative for your copy of this 32 page catalog or write to Air Devices Inc.



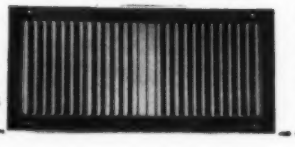
SIGHT TIGHT GRILLES

PLAIN LATTICE GRILLES





REGISTERS



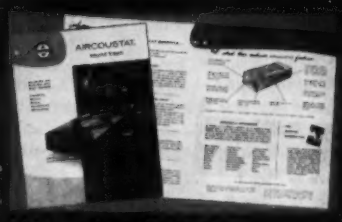
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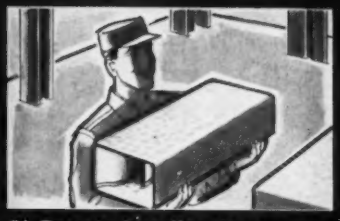
Circle No. 52 on Reader Service Card

7 ways AIRCOUSTAT.® can save you time and money

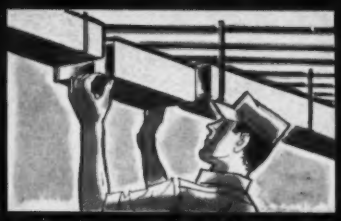
Sound Traps . . . with Guaranteed Results



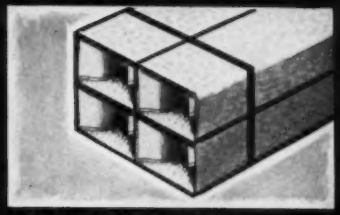
1) Easy to select—Just 3 steps to specify proper model. Save time, avoid errors.



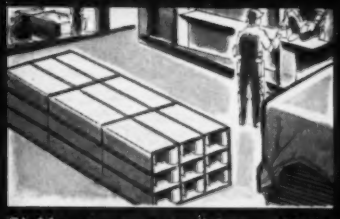
2) Easy to handle—No riggers or special equipment needed. Large units composed at job site.



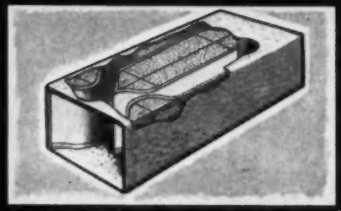
3) Easy to install—Units are installed the same as ductwork. Units have 2" extensions.



4) Fits all duct sizes—Big units are easily assembled from small Aircoustat units.



5) No storage problem—Units are delivered right to the job site, ready to install.



6) No maintenance—Units are fire-resistant, dust-proof and built to last a lifetime.



7) Guaranteed results—Solves every noise reduction problem. Units are completely reliable.

Pre-engineered by Koppers to eliminate guesswork, unnecessary calculations and difficult installations, AIRCOUSTAT Sound Traps guarantee trouble-free silencing of all duct-transmitted noise . . . at a savings in time and money to you.

AIRCOUSTAT selection is quick, simple and reliable. A choice of over 60 stock models, fabricated in 6 lengths, solves every noise reduction problem. AIRCOUSTAT is built to give a lifetime of maintenance-free service.

Write today for your copy of the AIRCOUSTAT Selection Manual, a quick guide to the right unit or combination of AIRCOUSTAT units to eliminate duct-transmitted noise in all air handling systems. Write KOPPERS COMPANY, INC., Sound Control Department, 3209 Scott Street, Baltimore 3, Maryland.

KOPPERS®

SOUND CONTROL

METAL PRODUCTS DIVISION

Engineered **Products Sold with** ***Service***

Circle No. 53 on Reader Service Card

tion, plus club soda and plain ice water. Riser has a fizzer button giving carbonated jet stream flow.

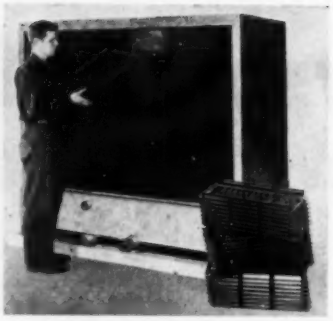
Circle No. 155 on Reader Service Card

Cooling Tower

Product: "Econ-O-Mizer" outdoor type cooling tower (Model AST).

Manufacturer: Acme Industries, Inc., Jackson, Mich.

Features: Floor area and overall space requirements have been reduced. Can be disassembled and reassembled quickly and easily on the site and the deck can be removed



for cleaning and maintenance. Plastic deck consists of a series of high-impact polystyrene drip trays fastened into building blocks. Blocks are stacked in the housing. Each drip tray has more than 600 individual, controlled drip spouts. Trays are staggered so water passes slowly downward from one tray to the next in a precise pattern. Gravity-type distribution plans distribute water evenly over the deck surface. Larger sizes, Models 264, 285, 296, have dual cooling chambers with two incoming water distributing pans, dual fans and motors, can be operated on one cell only.

Circle No. 156 on Reader Service Card

Pressure Snubber

Product: Pressure snubber.

Manufacturer: Chemiquip Co., New York, N. Y.

Features: Designed to protect pressure-sensitive instruments against line-induced pulsations or surges in refrigeration and air-conditioning systems. Also helps pro-



tect against leakage since snubber design eliminates a joint in connecting threaded devices to tubing. ¼" disc reacts to changes in pressure in the same way as a restriction orifice. Housing available in brass or steel. Sizes: ⅛ or ¼" npt, male or female, by ⅛ x ¼, 5/16, or ⅜" tubing, flared or compression.

Circle No. 157 on Reader Service Card

Liquid Chiller

Product: "Force-Flow" packaged liquid chiller.

Manufacturer: Remcor Products Co., Chicago, Ill.

Features: Available with air or water cooled condenser. Will maintain bath temperatures in ranges from −30 to 75 F, within plus or minus 2 F, ½ F, or 1/10 F. Models with temperature range of 15 to 75 F are equipped with corrosion resistant stainless steel type evaporator and corrosion resistant pump with stainless steel shaft and fittings.

Circle No. 158 on Reader Service Card

Self Service Case

Product: Self service freezer case. (Model AF9-SC).

Manufacturer: C. Schmidt Co., Cincinnati, Ohio.

Features: 34 F refrigerated shelf. Designed for self service bakery departments. Can be used in frozen food department where refrigerated shelf is used for items

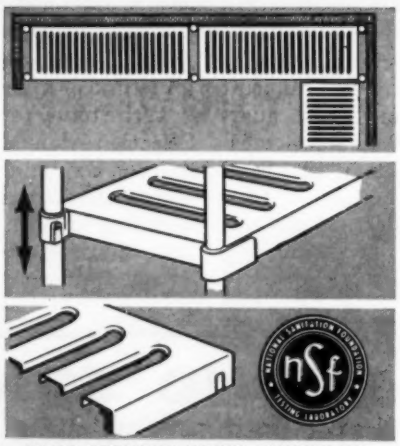
NEW MARK-2 SHELVING
USES ALL AVAILABLE STORAGE SPACE*



YOU SELL MORE SHELVING-
YOUR CUSTOMER SAVES HIGH COST OF WASTED COLD STORAGE SPACE

ANY LENGTH
IN INCREMENTS OF 2"
FROM 2'6" TO 7'6"

ANY WIDTH
IN INCREMENTS OF 2"
FROM 12" TO 2'6"



ALL SHELVES EASILY REMOVABLE AND ADJUSTABLE
Infinite vertical adjustment. Additional shelves can be added at any time.

LIFETIME, HEAVY DUTY, EASY TO CLEAN
Solid die-formed shelves with tubular posts clean easily and last a lifetime. All posts have stainless steel top caps and feet. Shelving available stainless steel or galvanized.

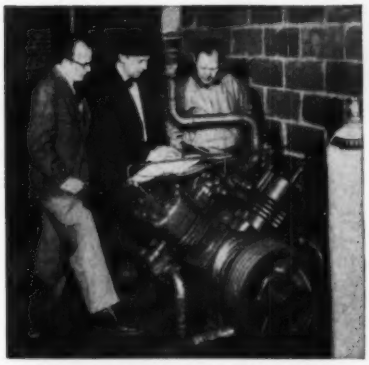
*Detailed data comparing Mark-2 shelving with shelves of limited stock sizes indicate as much as 70% increased utilization of storage areas.

Send for complete information on Economical Mark-2 Shelving. Write Dept.

FOOD STORAGE RACKS SINCE 1897

MARKET FORGE COMPANY, EVERETT MASS.

Circle No. 54 on Reader Service Card



Baltimore, Maryland, service engineer reports: "'Freon' refrigerants help us do a better servicing job. It's dry and safe—the most dependable refrigerant on the market today."



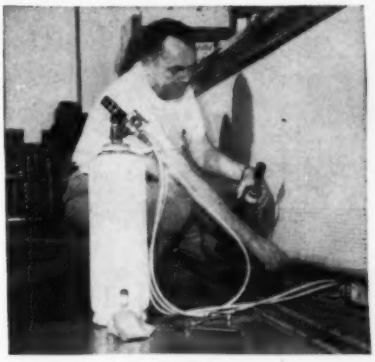
East Rockaway, New York, contractor reports: "Nothing works like 'Freon'. I'm convinced it's the best refrigerant on the market—safe and dependable for any job."



Louisville, Kentucky, service man reports: "'Freon' is the world's best refrigerant for our money. It's pure, dry and safe—never causes one bit of worry or trouble."



Atlanta, Georgia, contractor reports: "We've never had a bad batch of 'Freon' in the 25 years we've used it. It's never caused us trouble on the job or—after years of service—in a system."



Tucson, Arizona, service man reports: "'Freon' refrigerants help us do the best job possible. They're reliable and safe. Since 'Freon' came out, we've never used anything else."



St. Louis, Missouri, service man reports: "We've never had a moisture or corrosion problem in equipment charged with 'Freon.' It's absolutely dependable—always pure and dry."

All over the country, users are talking about the advantages of Freon* refrigerants



East, west, north or south—contractors and service men appreciate the extra quality of "Freon" refrigerants that costs them nothing extra.

"Freon" is today's premium-quality refrigerant . . . stable, pure, dry—nonflammable, nonexplosive, nontoxic. It's time-tested—in use over 27 years and made only by Du Pont—backed by years of technical and manufacturing leadership.

Specify "Freon" refrigerants for every refrigerant need. Your Du Pont wholesaler has it—now capped in gold and factory-sealed to guard its purity till you're ready to use it.

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

FREON® *premium quality* **REFRIGERANTS**

**Freon and combinations of Freon- or F- with numerals are Du Pont's registered trademarks for its fluorinated hydrocarbon refrigerants.*

Circle No. 29 on Reader Service Card



that tie in with frozen food. Two complete refrigeration systems, including coils, condensing units, and valves. Condensing units are factory installed in the vase. Size is 87" long, 41" wide, 60" high. Refrigerated shelf is 13" deep. Freezer section has 17.2 cu.ft. capacity and refrigerated shelf has 17.2 cu.ft. for stocking merchandise two high.

Circle No. 159 on Reader Service Card

Hot Water Boiler

Product: Electric hot water boiler.

Manufacturer: Precision Parts Corp., Nashville, Tenn.

Features: Designed for use with or without water chiller, for radiant panel, convector, baseboard and radiator type heating systems. Coal, oil, or gas-fired hot water systems can be converted. Supplies hot water at temperatures ranging from 60 to 200 F. Suited for new or old homes, motels, churches, commercial buildings, and swimming pools. Available in sizes from 40,948 Btu to 2,047,200



Btu. Space required for smaller unit is 20" wide, 20" high, 36" long. Larger unit requires 60" wide, 70" high, 108" long.

Circle No. 160 on Reader Service Card



MAKES EXTRA PROFITS FOR YOU!

Easy to use—easy to sell! Patented Erecta-Shelf is a low cost shelving tailor-made to sell with original walk-in cooler equipment or replacements.



Made of strong steel rods, capable of supporting 1000 lbs. per shelf, Erecta-Shelf permits complete air circulation, and may be hosed down for easy cleaning!

Each unit consists of uprights and shelves notched to friction-fit tightly and lock rigidly in place. No nuts or bolts are required! Assembly takes only minutes and new arrangements or additions may be made to accommodate items in all sizes, weights and shapes!

Durable, lightweight, amazingly strong—designed to meet every storage need—Erecta-Shelf just about sells itself. One demonstration will sell you on this extra profit maker. Write today for details!

ERECTA SHELF

a quality product of

METROPOLITAN WIRE GOODS CORP.

N. WASHINGTON ST. and GEORGE AVENUE
WILKES-BARRE, PA.

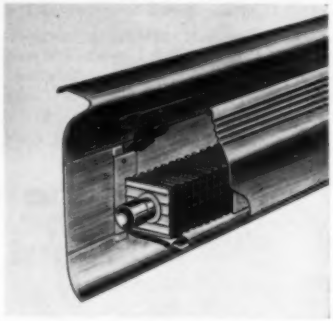
Circle No. 56 on Reader Service Card

Baseboard Unit

Product: "Acousti-Cover" simulated wood grain baseboard.

Manufacturer: Edwards Engineering Corp., Pompton Plains, N. J.

Features: For use in wood-panelled living rooms, dens or recre-



ation rooms. Covers are available in factory-cut, unbroken lengths from 2 to 20′ for fast wall-to-wall installations. Eliminates the need for mid-room splicing. Available in various tube sizes with different ratings: ½ and ¾" nominal tube sizes plus high-capacity units.

Circle No. 161 on Reader Service Card

Condensing Unit

Product: 5-ton air-conditioning condensing unit.

Manufacturer: Utility Appliance Corp., Gaffers & Sattler Div.

Features: For homes and small commercial concerns. Has an increase of 6% in capacity above former model.Rated at 60,000 Btu/hr.

Circle No. 162 on Reader Service Card



Install Insulation with

TUFF-BOND

Super-Strength Adhesives

TUFF-BOND #7
... fire-retardant adhesive for installing insulation

TUFF-BOND M-102-H
... economical duct liner adhesive

TUFF-BOND 21-C
... clear lap sealer and lap adhesive

TUFF-BOND 21-W
... white lap sealer and lap adhesive

TUFF-BOND #500
... exceptionally high-strength chemical-set adhesive with wide thermal range −100° F. to 350° F.

TUFF-BOND #1000
... high heat resistance for bedding and installing high temperature insulation

TUFF-BOND #12
... high pressure duct sealer

TUFF-BOND QUIK-SET
... neoprene-base, fast-setting adhesive. Recommended for installing metal and nylon hangers to smooth surfaces.

TUFF-BOND GENERAL PURPOSE IMPROVED
... all-around adhesive for installing insulation, insulation hangers, etc.

Ask for descriptive literature and prices.

GOODLOE E. MOORE
INCORPORATED
DANVILLE 25, ILLINOIS

Circle No. 15 on Reader Service Card

Calendar of Industry Events

September 20-22, 1959
Oil-Heat Institute of America
(Board of Directors Meeting)
Seaview Country Club
Absecon, N. J.

September 27-30, 1959
Refrigeration and Air Conditioning Contractors Association
(National Convention)
Ambassador Hotel
Los Angeles, Calif.

October 5-7, 1959
American Gas Association
(Annual Convention)
Conrad-Hilton Hotel
Chicago, Ill.

October 30 - November 1, 1959
Refrigeration Service Engineers Society (Annual Convention)
Atlantic City, N. J.

October 30-November 1, 1959
American Society of Refrigerating Engineers
(Semiannual Meeting)
Traymore Hotel
Atlantic City, N. J.

November 1, 1959
Air-Conditioning & Refrigeration Industry (Fall Meeting)
Chalfonte-Haddon Hall
Atlantic City, N. J.

November 1-2, 1959
Air Conditioning & Refrigeration Wholesalers (Annual Meeting)
Atlantic City, N. J.

November 2-4, 1959
National Commercial Refrigerator Sales Association
(Annual Convention)
Traymore Hotel
Atlantic City, N. J.

November 2-5, 1959
11th Exposition of the Air-Conditioning & Refrigeration Industry
Convention Hall
Atlantic City, N. J.

November 9-13, 1959
National Electrical Manufacturers Association
(Annual Meeting)
Traymore Hotel
Atlantic City, N. J.

December 1-4, 1959
National Warm Air Heating & Air-Conditioning Association
(Annual Convention)
Chase Hotel
St. Louis, Mo.

For
• Leak Detecting
• Soldering • Heating
• Brazing



PREST-O-LITE
TRADE-MARK
Refrigeration & Air-Conditioning Outfit

All the equipment you need for air-conditioning and refrigeration work in one handy steel case.

SENSITIVE LEAK DETECTION
—shows up as little as 100 parts of refrigerant gas in a million parts of air—even leaks too tiny to find with soapy water.

JOB-MATCHED OPEN FLAMES
—three torch stems for the exact flame you need—all instantly interchangeable with leak detector on same handle.

EASY TO USE
—no delicate parts to cause trouble. Color and intensity of detector flame indicate location and size of leak. Torch concentrates heat where needed.

AUTOMATIC CONTROL
—adjustable regulator maintains selected gas pressure. Calibrated screw for fast adjustment. Needle valve on torch handle for precise flame control.

Outfit includes torch handle, leak detector stem, 3 torch stems, regulator, 12½-ft. hose assembly, suction hose, and enameled steel carrying case. Complete (for B or MC Tank), $43.00.

Available for immediate delivery from your local supplier of LINDE products. Or write for further information to LINDE COMPANY, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N. Y.

Linde TRADE MARK — UNION CARBIDE

"Linde," "Prest-O-Lite," and "Union Carbide" are registered trade-marks of Union Carbide Corp.

Circle No. 14 on Reader Service Card

GAS WELDING

Continued from Page 46

and techniques of making proper welds.

Qualified instruction in gas welding is readily available through many vocational and trade schools, and through welding supply distributors across the country. Manufacturers' literature is also helpful, and is generally available from these distributors.

are some of the important things the operator should know:

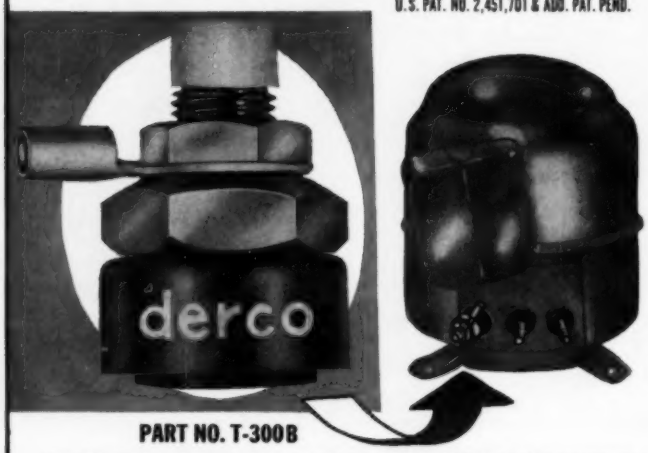
Essential welding terms and nomenclature; theory of welding; types of welding equipment needed for various jobs; characteristics of sound welds; safety precautions to be observed; codes governing different applications; ways of preparing pipe for all types of joints;

YOUR WHOLESALER CAN SERVE YOU — LET HIM!

save that compressor!

WITH DERCO TERMINAL SEALS

U.S. PAT. NO. 2,451,701 & ADD. PAT. PEND.



PART NO. T-300B

STOPS TERMINAL LEAKS ON SEALED UNITS INSTANTLY!

Simply screw the Terminal Seal over the terminal post and the leak is sealed permanently. CAN BE DONE IN JUST 3 MINUTES. No special tools are required.

Watsco features their all-new DERCO Seal which has a bakelite body and is short enough to allow the terminal cover to be replaced. Each seal has its own electrical connector. A special nut remover, to remove frozen or rusted nuts from the terminal post is included in each set, at no additional cost. The DERCO seal is designed to fit almost every make unit. Distributed by Watsco, Inc.

For complete information send for catalog #21. Write to Dept. B-9

"ANNOUNCEMENT TO THE TRADE"
Please take notice that infringers of Patent No. 2,451,701, covering our terminal replacement for sealed refrigeration units, will be prosecuted to the fullest extent permitted by law. This announcement is addressed not only to manufacturers of infringing terminal replacements, but also to those who sell, distribute or use them. (Signed) WATSCO, INC.

WATSCO INC. VISIT OUR BOOTH NO. 725 ARI. SHOW NOV. 2-5

1020 E. 15th STREET • HIALEAH, FLORIDA

Circle No. 59 on Reader Service Card

TYSON NAMED EXEC. VP OF EVANS ENGINEERING

Appointment of Jack J. Tyson as executive vice president and sales manager of F. J. Evans Engineering Co., Birmingham, Ala., has been announced. Evans distributes the complete line of Janitrol heating and cooling equipment.

Tyson formerly headed the company's Atlanta Div. In his new position, he will direct Evans' sales activities in the nine southern states in which it operates.

Also named to offices of the company were C. C. Heim, board of directors; R. J. Tucker Jr., treasurer; and A. F. Kruckeberg, secretary.

NATIONAL-U.S. LISTS SCHOLARSHIP WINNERS

National-U.S. Radiator Corp., for the seventh consecutive year, has awarded complete four-year college scholarships to selected high school graduates residing in communities where the corporation has manufacturing plants.

The new recipients are George A. Mostoller, William G. Reed, and Mark Heilmann, all of Johnstown, Pa.

All three presently are working at the firm's new engineering Center in Johnstown.

SHOP IN PEACE!



KING-SIZE SOUND TRAP to be installed in a new department store in Baltimore, Md. will provide a quiet, comfortable atmosphere for shoppers. The sound trap, designed and fabricated by Metal Products Div., Koppers Co., Inc., assures a noise reduction of 30 decibels in the speech frequencies. This is enough to virtually eliminate any noticeable sound from the air-conditioning system.

LETTERS

Continued from page 33

than 7500 already have been sold. We know this material can be helpful, because many of those who have used it have written to tell us so.

Webster Article Will Answer This Reader's Questions

EDITOR:

Since 1935 I've been working in this field and I am dismayed to see collections becoming more and more difficult in this area of western Massachusetts. I wonder if servicemen in other parts of the country also find this to be true?

It's a paradoxical fact that although I am busier than ever there is less and less net profit at the end of the year. How do you explain this? And, more important, what can you suggest that should be done about it?

This is no new problem to American business, I realize, and I would like to see an article in your magazine dealing with it."

HUGH A. SORENSON
Hugh A. Sorenson Refrig. Service
Greenfield, Mass.

Reader Sorenson's plea struck a responsive ear. Long before we received his letter, the editors of THE REFRIGERATION & AIR-CONDITIONING BUSINESS *had recognized the gravity of this problem and had asked George C. Webster to prepare an article for us on the specific subject of credit and collections. This article is scheduled to appear in our October issue. If you, too, have credit and collection problems, be sure to watch for it.*

Webster, you will recall, is the business management consultant who wrote exclusively for our magazine the "You're the Boss" series of articles that we published all during 1958. So far this year he has written two articles for us. The first, "9 Ways to Keep Your Employees Honest" was featured in June; the second, "Don't Waste Your Time", appeared last month.

YOUR WHOLESALER
CAN SERVE YOU — LET HIM!

LAB'S NEEDS ARE MET BY WESTINGHOUSE UNITS

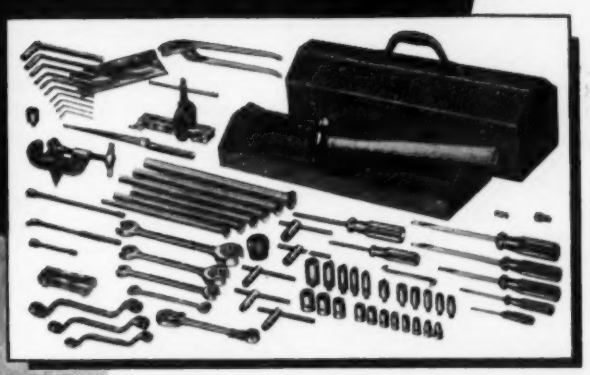
Strict temperature and humidity requirements are maintained in a spectograph lab and IBM room at the new Mallory-Sharon Titanium Corp., Niles, Ohio. Four Westinghouse Multizone air distributing units plus two air-conditioners make this possible.

This equipment also comfort-conditions the other areas in the 100 x 300′, two-story building. The four Multizone units deliver a total of 76,000 cfm of cooled and filtered air to maintain a db temperature of 80 F at 50% rh.

Cooling requirements of the lab are 97,000 Btuh. A unit with electric reheat coils and hot water humidifier keeps the air in the lab at a very constant temperature and moisture content of 72 F and 50% relative humidity.

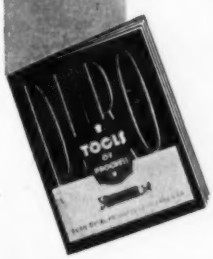
A similar unit is installed in the IBM room which requires 73 F and 45% rh. The cooling load is 200,000 Btuh.

The most widely used
REFRIGERATION SERVICE TOOLS!



Duro-Chrome "Matched Quality" Sets
developed especially for refrigeration service

More refrigeration service men use DURO-CHROME tools than any other make! That's because they're quality tools that feel right, work right, and give long, satisfactory service. They're matched, too, with the natural grip and perfect balance that makes them feel "at home" in your hands. Whether it's the Duro-Chrome Refrigeration Ratchet Wrench, Flare Nut Wrenches, Socket Sets, or any of the many other Duro-Chrome Tools specially designed for refrigeration service jobs, your wholesaler has them all. For the most complete line of Refrigeration Service Tools, get *your* copy of the new Duro-Chrome Pocket Catalog that fits your pocket or your kit.



SEND FOR CATALOG—Ask your Duro Jobber for a free copy, or send coupon to DURO, with 10c in coin to cover costs of postage and handling.

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Enclosed is 10c in coin for which please send me my personal copy of the Pocket Size Duro-Chrome Catalog.
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Also makers of nationally advertised DURO Power Tools.

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Circle No. 58 on Reader Service Card

HELP WANTED?

I'm an expert with years of world wide experience. In fact, wherever refrigerators, freezers or air conditioners are repaired by smart businessmen, you'll find me. My name is Frankell's Hermetic Compressor Opener. I can open any shape compressor (up to 20" in dia.) regardless of the weld. And best of all, I take only two minutes of your time to do it! Or any one's time for that matter — I'm that easy to operate — No Gimmicks! No Fixtures! No Jigs! Remember, when you open and repair a hermetic compressor, the profits are big. And just one hermetic job a week and I'm paid for in. full. I'm recommended by the world's leading firms. These are just a few of my references: American Motors Corp., Kelvinator Div., Detroit, Mich.; Siemens, Erlanger, West Germany; Sealed Unit Parts, N.Y.C.; Tecmar-Carrier, Maricaibo, Venezuela; Jones Refrigerator Co., Raleigh, No. Carolina, and many more. I cost only $695 net F.O.B. N.Y. or I can be rented monthly for an amazingly low cost. Write for complete information today. Write Dept. G Frankell Manufacturing Co., Inc., 862 Newark Ave., Jersey City 6, N. J.

Export Facilities

2,552,102 COMPRESSORS SHIPPED JAN.-APRIL '59

Manufacturers' shipments of compressor bodies in the first four months of 1959 totaled 2,552,102 units, Air-Conditioning and Refrigeration Institute reports. The April total was 732,040 units, compared with 731,970 in March, 560,571 in February and 518,755 in January.

Since compressor bodies designed for use in household refrigerators are being included for the first time in 1959 figures, there is no comparable total figure for the similar 1959 four-month period, when manufacturers' shipments amounted to 1,421,489 units, *not* including household refrigerator units.

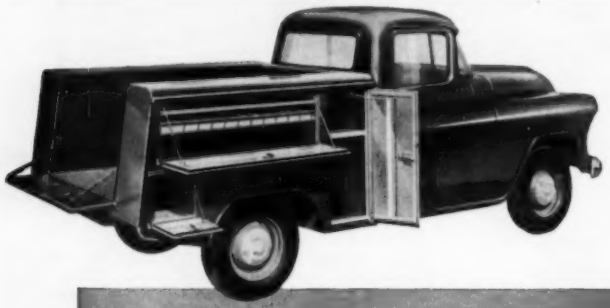
Shipments of compressor bodies for automotive air-conditioning in the first four months of 1959 totaled 222,391, compared with 174,119 during the same period of 1958.

The figures are based on reports of manufacturers whose output is estimated to be in excess of 90% of U.S. production of compressor bodies.

Manufacturers' Shipment of Compressor Bodies

(Including units for household refrig.)

Horsepower	Shipments Including Exports (Number) April 1959	Jan.-April 1959
1/8 HP & Under	117,041	438,568
1/6 HP		
1/5 HP	67,424	255,204
1/4 HP	179,735	576,200
1/3 HP	31,700	104,183
1/2 HP	12,781	50,763
3/4 HP	9,911	31,471
1 HP	113,685	453,799
1-1/2 HP	40,611	124,129
2 HP	58,126	173,463
3 HP	17,587	54,831
5 HP	12,158	39,470
7-1/2 HP	4,775	15,520
10 HP	1,290	5,199
15 HP	746	2,362
20 HP	165	620
25 HP	243	778
30 HP	199	620
40 HP	191	651
50 HP	158	465
60 HP	106	372
75 HP	74	233
100 HP & Over	70	173
TOTAL	668,776	2,329,074
For Automotive Air-Conditioning — Total	63,098	222,391
For Ammonia Refrigerant — Total	166	637
GRAND TOTAL	732,040	2,552,102



Service-Master costs so much less in the long run that it's actually false economy to settle for any other make. Here's a truck body that has class . . . starting with the way it's put together and ending with the way it stays together without constant upkeep through the life of several chassis. See one, go over it carefully, get all the facts, compare and you'll know why Service-Master is your very best service body buy!

POWERS

Service-Master®

TWO MODELS . . . FOUR SIZES

for 1/2, 3/4, 1 and 1 1/2 ton chassis

A standard Model SM-15 (¾ ton) Service-Master is shown at top left. Below is the same model with a Canopy Top. All bodies are available for immediate delivery in all 48 states.



Before you buy any service body . . .

SEND FOR THIS FREE 6-PAGE FOLDER

It's loaded with valuable information



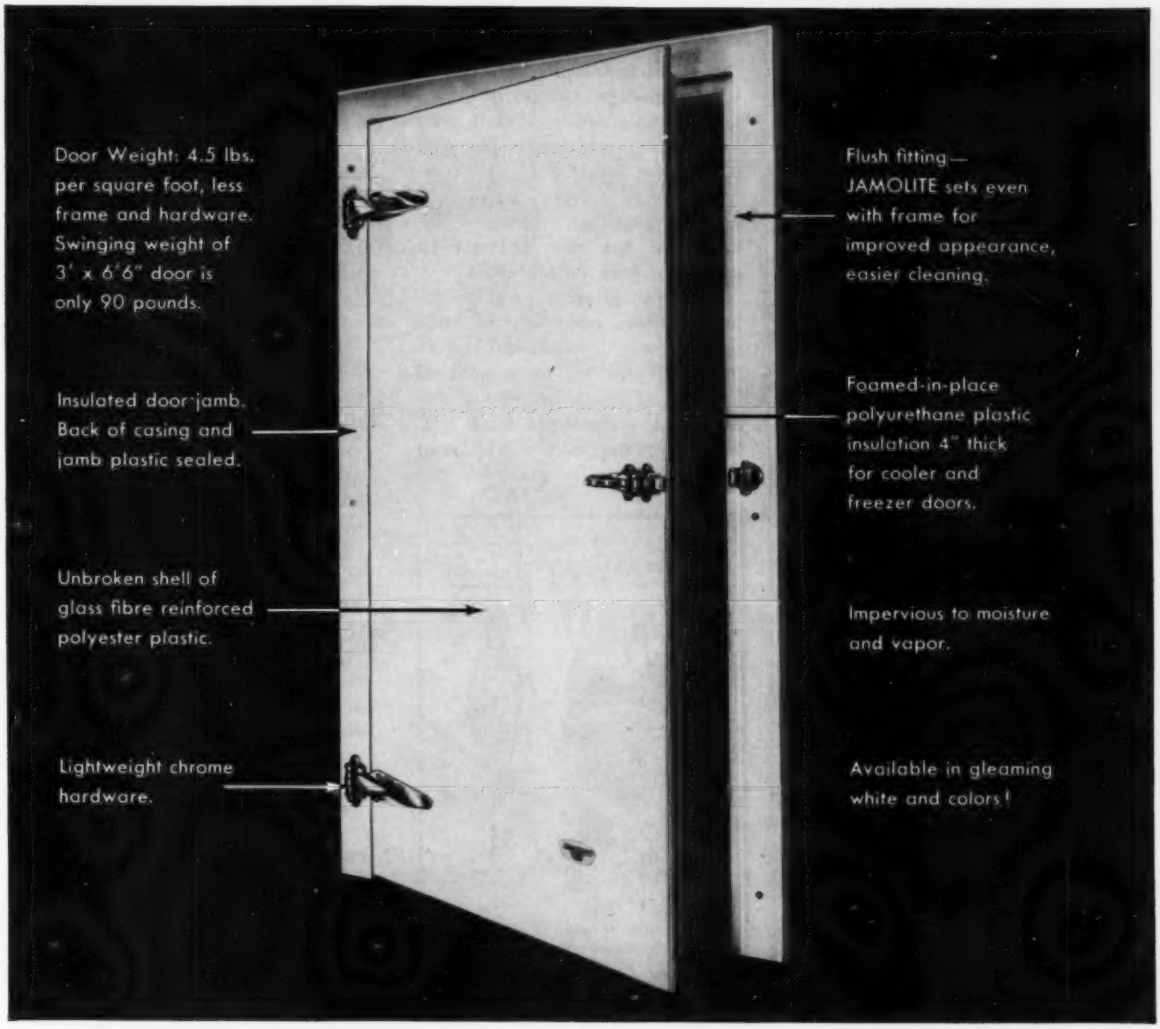
McCABE-POWERS BODY COMPANY

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Circle No. 61 on Reader Service Card

NEW concept in food service cold storage doors:

Jamison JAMOLITE*—Lightweight Plastic Doors



better appearance • improved performance • lower cost

• IT'S HERE TODAY—a revolutionary new concept in cold storage door design and construction—a door as easy to install as a household door. For the Food Service Industry, JAMOLITE Lightweight Plastic Doors now bring new, practical advantages:

smooth, easy-to-clean surface

rigid, one piece construction

will not warp

superior insulating efficiency in both door and frame

Investigate this brand new Jamison development for either replacement or new construction. Write today for all the facts on new JAMOLITE Lightweight Plastic Doors to Jamison Cold Storage Door Co., Hagerstown, Md.

*Jamison trademark

JAMISON

COLD STORAGE DOORS

Circle No. 70 on Reader Service Card

SYSTEM SELECTION

Continued from Page 45

Operation of the fans would have raised the normal operating costs beyond a desired level. The motors would also add approximately 14 tons to the refrigeration load, requiring the use of larger compressor and evaporative condensers with correspondingly larger motors.

To save floor space and still use this type of system, consideration was given to elevating the blowers on structural steel supports. However, this would have interfered with the stacking of products.

Placing the units above the loading dock was still another consideration given this type of system. But this would have required a heavy roof structure and heavy supports for the dock, plus the installation of expensive insulated enclosures to house the blowers.

The third system considered involved the use of ceiling type blowers containing pipe coils and air circulating fans. No floor area would be taken up with this type of system but there would be need for a heavy ceiling construction. Also about 65 hp in motors would be required to operate the fans.

The units in this system would have extended down into the room so far that they would interfere with stacking of the products. A 2′ increase in height would compensate for this, but would have meant approximately an additional 2000-sq.ft. of walls, and a similar amount of insulation. It would also mean an increase of approximately 100,200 cu.ft. of internal area which would have to be refrigerated.

The idea of placing the blowers on the roof was ruled out because of the expensive insulated housing which would have been required.

The fourth system studied was a central air cooling system and air distribution ductwork. Because of the room size the installation presented problems, plus the fact that its cost was prohibitive.

The problem was finally resolved by designing a system combining the advantages of the coil and blower systems, and eliminating many of the disadvantages.

Each 34 x 28′ bay in the refrigerated area was considered as one small room and is served by a separate unit cooler. Each cooler has hot gas coil under the drain pan. The pan is insulated to prevent heat loss from the coil into the freezer room. Each is equipped with a ¼-hp motor for driving the 2490-cfm fan.

The refrigeration plant consists of a two-stage compound ammonia compression system with evaporative condensers. The unit coolers are supplied ammonia refrigerant by a liquid pump feed system. They are arranged for automatic hot gas defrost in groups of four or five units.

This system most nearly approaches the advantage of coils since it only involves the use of 50 ¼-hp motors, or a total of 12.5 hp. it also offers the advantage of a conventional large type blower system, since air is being moved by fans for good air distribution. The units employ liquid free circulation. Air distribution is accomplished without the use of expensive ductwork.



"Oh, cut it out! I've sold an air-conditioner before!"

Each of the unit coolers contains steel tubing and such a small amount of ammonia that it defrosts rapidly. Line sizes are small compared to those for most other types of systems.

The defrosting timing cycle is controlled automatically by an electric timer and solenoids. The timing has been arranged to defrost 11 groups of four units and one group of six units, each at different times. This allows two hours for the defrosting of any one group, but defrosting is actually accomplished in a matter of minutes. In this manner sufficient refrigeration is available so that no change in room temperature is noticeable when any one group is defrosting.

The refrigeration plant is entirely automatic under the control of room thermostats at each group of unit coolers. The compression system is under refrigerant suction pressure control. Compressor capacity is variable from 100% to about 10% by automatic control.

Conditions inside the room are constantly held at –10 F regardless of outside air temperature, even while introducing 250,000 lbs. of frozen food per 24 hours at an incoming temperature of zero degrees or lower.

Efficiency of the installation is proven by the fact that each connected horsepower of compressor motors handles 5000 cu.ft. of the refrigerated area, which is equivalent to a –10 F room which measures 25′ long, 25′ wide, 8′ high. One booster compressor and one high stage compressor are equipped with multiple steps of capacity reduction which permits maximum flexibility for minimum operational cost. The booster and high stage compressors were the only compressors operating during the winter months, and most of the time they were operating at reduced capacity.

Ammonia used in the system is cooled to –25 F in a horizontal low-pressure receiver and is circulated through the air handling units by means of a single stage ammonia pump.

Multiple evaporative condensers are located on the roof above the engine room. They are arranged to automatically float on and off the line as discharge temperatures dictate. This method also saves on operating costs since units only operate when required.

RECOLD UNIT PATENTED

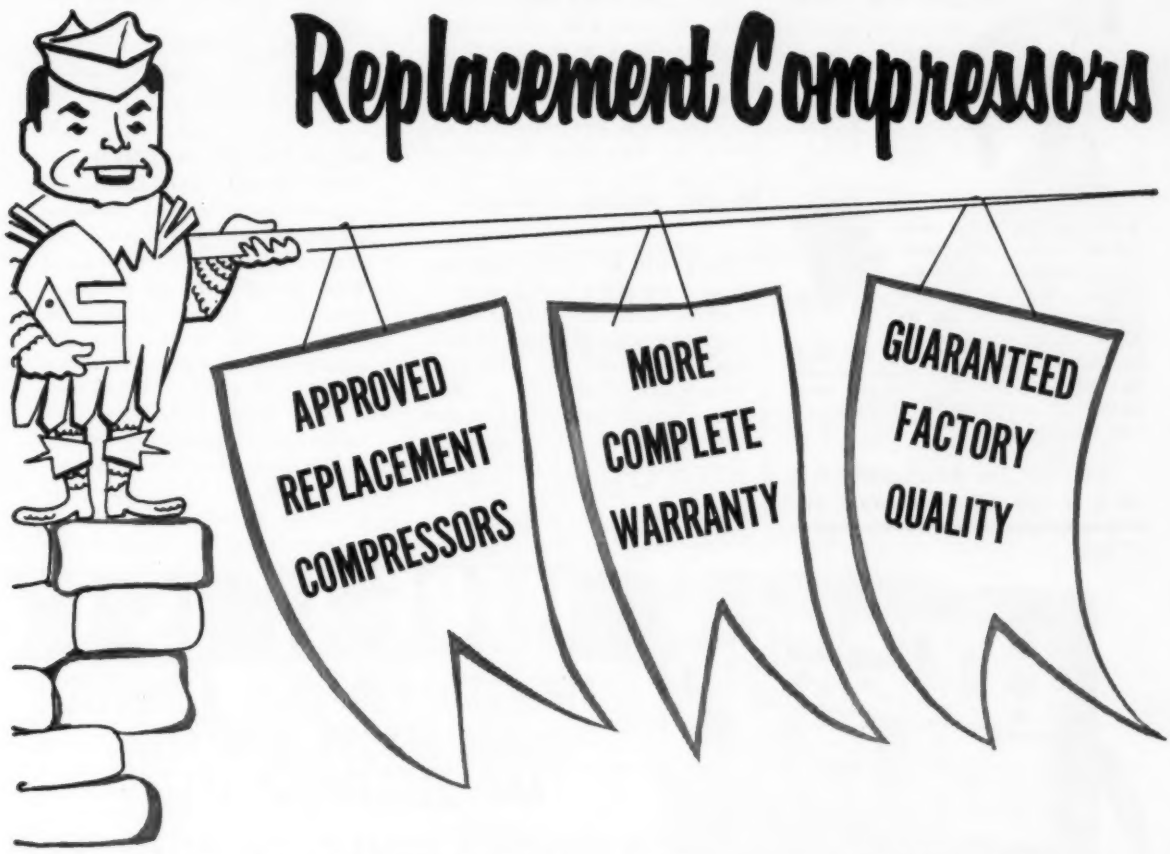
The United States Patent Office has awarded Dan Wile, vice president and chief engineer, and Zhizuo Robert Adachi, chief engineer for refrigeration products, of Recold Corp. a patent covering the Recold "RE" unit room air-conditioner.

No. 6 in a series on better compressor servicing

Herman Hermetic Hints

DON'T BE MISLED ON

Replacement Compressors



Your Tecumseh Wholesaler is your **only** source for approved replacement compressors, more complete warranty, and guaranteed factory quality. What does factory quality mean to you? It means that you get a compressor accurately assembled, properly balanced, completely dehydrated, and specifically designed for the application. This is essential to assure smooth, economical operation. In addition, your replacement compressor will automatically contain all the latest design improvements and electrical parts will accurately match the compressor application. And the Tecumseh New Compressor Warranty, carried on all repair and return compressors, cannot be matched by any rebuilder. See your Tecumseh Wholesaler for approved replacements. You can't do better!

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TECUMSEH PRODUCTS COMPANY

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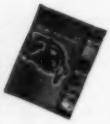
Handy Tube Bender

Smoothly Bends ANY Pipe or Tubing

⅜" to 1⅛" O. D.







● Just a twist of the wrist assures perfect, even bends . . . right-angle, any angle, U and offset — every time. Eliminate need for ells. No more guesses — no kinks! Save enough time, labor and money on ONE job to pay for your Handy Bender.

See your supply house—or write for free folder today.

HOLSCLAW BROS., INC.

430 N. WILLOW ROAD — EVANSVILLE, IND.

TEACHER'S PAPER WINS WOLVERINE KEY AWARD

The annual Wolverine Tube Diamond Key Award has been presented to Professor H. M. Hendrickson, for his technical paper related to refrigeration, published in Refrigerating Engineering." His paper is entitled, "Saline Water Conversion by Freezing."

This award has been presented annually since 1940. Hendrickson is a professor in the department of mechanical engineering, University of Washington in Seattle.

The award presentation was made by American Society of Heating, Refrigerating and Air Conditioning Engineers.

YORK SIGNS YEAR-ROUND HEAT PUMP CONTRACT

Under terms of contracts signed by the public building commission, Springfield, Ill., York Div., Borg-Warner Corp., will provide a compound-compression air source heat pump system for year-round air-conditioning in a new 3-story, 70,000-sq.ft. municipal building. The structure is the first major municipal building in the country to use heat pumps year-round.

The York system will be located in a penthouse engine room. Two identical heat pump packages will operate together when maximum heating or cooling is required. Simultaneous heating or cooling for different zones within the building will be available at any time during the year with this new type of system.

The $2½-million structure is scheduled for completion before the end of 1960.

FREE SYRUP OFFERED COUNCIL CUSTOMERS

A new merchandising aid is being offered to distributors and dealers by Council Mfg. Corp. With the sale of each Icemaker-Drinkmaker combination unit, the company ships to the purchaser eight gallons of syrup concentrate in root beer and/or fruit flavors.

When mixed with sugar, this makes enough fountain syrup for 32,768 six-ounce drinks. At ten cents each, the buyer can gross $3,276.80 on this syrup.



HERE IT IS!

AIRSERCO PORTABLE HERMETIC COMPRESSOR ANALYZER AND ELECTRICAL TESTER

●WEIGHS ONLY 29 POUNDS!

●50 AMPERES MAXIMUM RUNNING CURRENT!

6 Superb Instruments! *Can be used individually or together.*

1. Heavy duty capacitor and split phase motor starter.
2. Dual range volt ammeter. 115/230 volts. 0-10, 0-50 amperes.
3. Three range direct reading capacitor analyzer. Checks both start and run capacitors from 0 to 575 mfds.
4. HI-POT insulation tester.
5. Three phase tester with rotation indicator.
6. Dual range ohmeter 0 to 200 ohms.

...will quickly and positively test all makes of hermetic motors and compressors under FACTORY APPROVED STANDARDS.

AIRSERCO MANUFACTURING CO. PITTSBURGH 13, PENNSYLVANIA, U.S.A.

Request 4 page, 2 color booklet today.

Circle No. 57 on Reader Service Card

AIR CLEANER TERMS ARE STANDARDIZED

The Air Filter Institute has approved recommendations of its Electronic Air Cleaner Technical Sub-committee to standardize terminology and establish certified ratings for electronic air cleaners.

The new set of electronic air cleaner specifications includes:

1) That the name of the testing method be defined as "The National Bureau of Standards Dust Spot Method." The method uses atmospheric air without adding other dust or contaminants.

2) That the identifying term of "Electronic Air Cleaner" be used by all members in their literature.

3) That efficiencies of 85%, 90%, and 95% will be cataloged.

4) That capacity tables be based on efficiencies of 85%, 90%, and 95%, expressed in cfm, and rounded out to the nearest 10.

5) That the cell face area be defined as the gross area calculated from the outside dimensions of the



"I suggest you get air-conditioning in this office."

cell and expressed in square feet carried to three significant figures.

6) That the term "velocity" may be used in catalogs although it is not necessary since cell capacity in cfm for a given efficiency is basic. If used, "velocity" shall be defined as a calculated value in fpm equal to the capacity of the unit in cfm divided by the cell face area of the unit in square feet carried to three significant figures.

7) That efficiency curves may be used in catalogs provided that velocity and/or face area values are defined in accordance with items No. 5 and 6.

8) That no claims will be made for collecting particles smaller than 0.01 microns.

9) That catalog data include the over-all dimensions of the unit or system, since these dimensions usually are different from the sum of all the cells and include framework and/or housing.

10) That an "AFI Certification of Ratings" be based on a well defined testing procedure established by a test code committee and using the N.B.S. Dust Spot Method.

11) That a standards committee be established to supervise tests, maintain records of tests, approve laboratories for certified testing, make recommendations on issuance of certification seals, and to receive and check any inquiries regarding the accuracy of certified ratings.

NEW DISTRIBUTOR NAMED

The appointment of *P. J. Wolfson, Co. Inc.*, New York, N. Y., as foreign distributor for explosion-proof refrigerators, has been announced by **Kelmore Service, Incorporated.**

REPLACEMENT KITS
Service 159 different Klixon Relay Ratings With ONLY 9

Klixon Star Series
MOTOR STARTING RELAYS



The KLIXON C6360 Motor Starting Relay is the most commonly used relay in the refrigeration field. Each "Star Series" Kit contains nine relays for quick, easy and correct replacement of most C6360 ratings in the 115 volt, 1/12 to ½ h.p. domestic refrigeration line.

Packaged complete with leads and terminal screws ready for installation, the 9 selected relays are rated by horsepower. A cross-reference chart (horsepower to KLIXON Relay number), similar to the chart below, is on the inside cover of each kit.

For Pancake 115 Volt Type		Will Also Replace following Original KLIXON Part Numbers
H.P.	Tecumseh Model Numbers	Use:
1/12	P1218, P1219	C6360 ★ 122	C6360-119, C6360-120, C6360-121, C6360-122, C6360-123, C6360-124, C6360-125, C6360-194, C6360-219
1/8	P81	C6360 ★ 129	C6360-126, C6360-127, C6360-128, C6360-129, C6360-130, C6360-131
1/4	P61, P6112	C6360 ★ 143	C6360-103, C6360-140, C6360-143, C6360-145, C6360-240, C6360-499
1/3	P5112, P5312	C6360 ★ 149	C6360-147, C6360-149, C6360-152
1/2	AP43, AP4111	C6360 ★ 291	C6360-166, C6360-201, C6360-266, C6360-268, C6360-291
For 115 Volt Single Cylinder Internal Type		Will Also Replace following Original KLIXON Part Numbers
1/3	S84, S88	C6360 ★ 143	C6360-103, C6360-140, C6360-143, C6360-145, C6360-240, C6360-499
1/2	S84, S88, S8814	C6360 ★ 104	C6360-104, C6360-154, C6360-155
3/4	S5414, S5814	C6360 ★ 281	C6360-160, C6360-161, C6360-162, C6360-183, C6360-258, C6360-260, C6360-261, C6360-262, C6360-264, C6360-362
1	S4414, S4416, S4814	C6360 ★ 291	C6360-166, C6360-201, C6360-266, C6360-268, C6360-291
1½	S3N14, S3N16, S3N14, S3N16, S3414	C6360 ★ 272	C6360-270, C6360-272, C6360-274
2	S2N14	C6360 ★ 283	C6360-282, C6360-283, C6360-382, C6360-383, C6360-384, C6360-482

Leads packed with each Relay provide for Special Terminal connections —1 & —7 (ex.: C6360 ★1221, C6360 ★1227)

With a small, compact "Star Series" Kit in your tool box you'll — complete any relay job in one service call — make fewer trips to your supplier — replenish stock without delay.

KLIXON Replacements: Motor Starting Relay Kits and Inherent Overheat Motor Protectors are available through your distributor.

METALS & CONTROLS
4909 FOREST STREET, ATTLEBORO, MASS., U.S.A.
A DIVISION OF TEXAS INSTRUMENTS INCORPORATED
Spencer Products: Klixon® Inherent Overheat Motor Protectors
Motor Starting Relays • Thermostats • Precision Switches • Circuit Breakers

Circle No. 74 on Reader Service Card

TEXAS JOBBER MAKES TERSCO NEW FIRM NAME

A former abbreviation has become the official name of Texas Refrigeration Supply Co., Inc., now TERSCO, Inc. Its general offices are in Fort Worth, Tex., but the company also has stores in Waco, Lubbock, and Odessa.

Jesse K. Mattox Jr., executive vice president, said the former name no longer described his overall operation. Once only refrigeration, this operation has spread to air-conditioning, heating, ventilating, parts, and equipment.

The company started in 1936 as McKinley Refrigeration Supply Co., and changed its name in 1945.

CEILING FIXTURE CUTS OFFICE EQUIPMENT HEAT

A combination ceiling light fixture and air diffuser has helped solve a heat problem caused by electronic computing machines at the home offices of Travelers Insurance Co., Hartford, Conn.

Engineers had to devise a draft-free air cooling system which would offset the heat from more than 20,000 electronic tubes contained in the office equipment. Another requirement was to retain the modern lines of the drop ceilings.

The answer was found in a unit called "Multi-Vent Troffer". The unit is a flush-mounted, fluorescent lighting fixture that hides a low-velocity air diffuser, attached above. Designed and developed by Pyle-National Co., the unit maintains a low-speed air flow through small slots in the light fixture. It provides draft-free cooling, flexibility of room partitioning, and eliminates cluttered ceilings.

The office equipment requires more than 50 miles of cables and consumes power equal to that needed by about 1500 homes.

ABSORPTION UNITS COOL GULF RESEARCH CENTER

Gulf Research & Development Co., Harmarville, Pa., is being equipped with two absorption refrigeration machines as a major step in providing air-conditioning for the entire research center.

The installation is by Carrier Corp., which already has air-conditioned several laboratories at the center.

Most of the more than 1,500 employees will work in a controlled climate when the project is completed. Systems are being designed so that a high volume of exhaust air will carry off fumes generated in laboratory experiments with petroleum products.

The absorption machines, of 236-ton cooling capacity each, will use steam to produce chilled water for air-conditioning units installed in parts of five major laboratory buildings and several smaller structures.

Rather than mar the research center's campus-like atmosphere, the absorption machines will be placed in an underground vault and covered with landscaping. From this centrally located refrigerating plant, chilled water for cooling will be piped through subterranean passages, which also are used as all-weather walkways by Gulf personnel.

For Accurate TEMPERATURE RECORDS at MODERATE COST



Use TEMPSCRIBE Recorders

BULB-TYPE (illustrated)—*For recording temperatures at a distance*
BI-METAL TYPE — *For recording temperatures in surrounding air*

- Portable—easily carried. Can be set on flat surface or hung on wall.
- Spring-wound instrument-type clock: 3 standard movements—8 hours, 24 hours or 7 days.
- Instrument measures 4½" x 5½" x 7½"; uses 4¼" diameter charts.
- Chart graduations easy-to-read; spaced uniformly over full range.
- Pen and its actuating components are in door. Doors are completely interchangeable to convert to any temperature range, or from bi-metal type to bulb-type.

Also available: (1) Interchangeable door with electro-magnetic armature to record running time of motors, burners, solenoid valves, etc. (2) Two-pen doors for recording temperature and electrical operation on same chart.

Write for Leaflets 786 and 872

BACHARACH INDUSTRIAL INSTRUMENT CO.
200 N. BRADDOCK AVE. • PITTSBURGH 8, PA. T-25

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SOLDER ALUMINUM with ordinary soft solders

Here it is—a major breakthrough in aluminum fabrication — LA-CO Aluminum Flux. You can solder aluminum just like any of the common metals . . . using ordinary 40-60, 50-50, 60-40 or 95-5 solders . . . ordinary soldering irons or torches. Secret's in the remarkable fluxing action which achieves a perfect bond between aluminum and solder — as strong as the solder itself. Needs no cleaning, scraping, sanding . . . yet it is completely acid-free. There's nothing else like it!



Here's How!

LA-CO Aluminum FLUX

Production, service and maintenance men — write for sample (on company letterhead, please).

LA-CO BRAND

THE LAKE CHEMICAL CO.
3082 W. Carroll Ave., Chicago 12, Ill.

Circle No. 72 on Reader Service Card

REED NAMED CHAIRMAN AT I-B-R MEETING

Malcolm C. Reed, president, Dunkirk Radiator Corp., Dunkirk, N. Y., has been elected chairman of the Institute of Boiler and Radiator Mfgs., it was announced at the I-B-R's annual meeting in Absecon, N. J.

Elected to serve as vice chairman was Daniel J. Quinn, vice president, sales, plumbing and heating div., American-Standard. I-B-R general manager, Robert E. Ferry was named secretary treasurer.

The following were elected to the I-B-R executive board: T. L. Arnold, Fedders-Quigan Corp.; R. H. Bohr, Federal Boiler Co., Inc.; V. A. Good, Burnham Corp.; F. S. Hudson, Jr., National-U.S. Radiator Corp.; H. E. Kritzer, Kritzer Radiant Coils; M. Lundgren, Vulcan Radiator Co.; M. J. Murray, John J. Nesbitt, Inc.; R. G. Pinkerton, Peerless Heater Co.; S. K. Smith, H. B. Smith Co., Inc.; E. R. Westphal, Weil-McLain Co.

CENTRAL LUBRICATION USED FOR MARLO UNITS

A centralized lubrication system which oils all bearings simultaneously in a single operation is now standard, at no extra cost, on all Marlo air-conditioning and refrigeration equipment with sleeve-type bearings.

In the forced feed system, the single pull of a plunger delivers a measured amount of lubricant from a central reservoir to all bearings at a pressure of 30 psi. On Marlo units with two or three bearings, a system with 60 cc lubricant reservoir is used — enough for 60 shots. On units with four or five bearings, a 150 cc system is used, providing 75 shots without refilling. Because the system is sealed and lubricant is filtered before it enters the distribution lines, no foreign matter can reach the bearings.

The system is said to reduce and simplify maintenance, and eliminate guesswork and human error in lubrication.

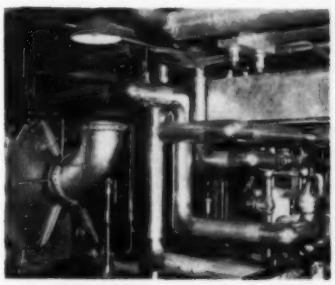
YOUR WHOLESALER
CAN SERVE YOU—LET HIM!

TESTS SHOW COOLING IS KEY TO CANDY STORAGE

Refrigeration offers the simplest means of extending the shelf life of candies, according to Dr. J. G. Woodroof, chairman, division of food processing, Georgia Experiment Station. In addressing a joint session of the National Confectioners Association, and American Association of Candy Technologists, Woodroof dviulged the results of tests conducted by the experiment station.

Correct humidity and proper temperature were cited as the two prime factors affecting the stability of candies. Sweet chocolate, the report indicated, would remain in stable condition for 3 months at 68 F, 6 months at 48 F, 9 months at 32F, and 12 months at zero degrees. Moisture content was kept at 0.35%, and relative humidity was 40%.

Freezer storage of candies has enabled producers to keep the product as long as 12 months, and then, through proper thawing offer it for sale as fresh candies.



HUMPED ELBOW installation makes all-aluminum jacketing available for insulated pipelines. Installed at Kansas Power & Light Co.'s new Tecumseh, Kans., plant, it is made of sheet supplied by Aluminum Co. of America.

D-H SPEEDS SERVICE ON PUMP WARRANTY

Drayer-Hanson's warranty program on Fairbanks-Morse pumps now offers contractors rapid service and fast reimbursement for service charges on pumps, within warranty, used on Drayer-Hanson products.

Contractors may obtain a new bulletin listing nationwide repair stations from any Drayer sales agent groups.

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anco
cooling water treatment

√ Prevents *scale formation*
√ Protects *metals against rusting and pitting*



ANCO Cooling Water Treatment is specially formulated to prevent scale, rust and pitting in new or recently-cleaned condensers or cooling towers. Packed in convenient cans, ready to use, it is available in sizes to suit the capacity of your system. Just place the can in the condenser pan or tower basin where there is average agitation and the scale and rust inhibiting formula goes to work. The contents slowly dissolve, keeping the system clean and operating at peak efficiency. Ask your supplier about it today.

SPECIALISTS IN MAKING WATER BEHAVE
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DRIERS DRIERS DRIERS

Refrigeration Research offers a high quality line of driers for every need.....in a complete size range. All Refrigeration Research driers contain proven filtering media and are generously sized.

Bull Dog *Progressive* Filter-Driers



Your choice - Silica Gel or Molecular Sieve desiccant. Bull Dog Filter-Driers feature progressive filtering..... retain a maximum amount of moisture, dirt and foreign matter without showing increased pressure drop. Low in cost and high in quality.....specify the Bull Dog line.....in the drying agent of your choice.

Deluxe Dehydrators

Deluxe dehydrators feature all brass construction and extra large fittings. Containing Silica Gel desiccant, they are available in either refillable or non-refillable sizes.

Driers - Receiver Driers - Receivers
Accumulator Driers - Accumulators
Suction Accumulators - Manifolds
Heat Exchangers - Strainers
Mufflers



Write for current catalog or contact your wholesaler.

REFRIGERATION RESEARCH

Circle No. 64 on Reader Service Card

WESTERN SHOW EXPECTS 20% MORE ATTENDANCE

Ten special clinics, sessions, and seminars are included in the educational program of the 3rd Western Air Conditioning, Heating, Ventilating and Refrigeration Exhibit and Conference next April 27-30, in Shrine Exposition Hall, Los Angeles, Calif. Officials expect to attract 20% more attendance than the previous show in 1958. It serves the 13 western states, including Alaska and Hawaii.

The show is sponsored by Western Air Conditioning Industries Association. Fred J. Tabery, 3443 S. Hill St., Los Angeles 7, is exhibit manager and now is assigning space to exhibiting firms.

HAVE you ever tried to explain the meaning of such terms as ebullator, apparatus dewpoint, or binary vapor cycle? Or have you ever come across a refrigeration term that you yourself didn't understand? If so you should be interested in "Refrigeration Terms and Definitions."

This 36-page booklet, approved by American Society of Refrigerating Engineers, provides definitions of words and terms used in all phases of refrigeration and air-conditioning. It contains an index to classifications, an alphabetical index, and the classified list of terms and their definitions. Can also be used to find the correct word or term if the definition is already known.

Copies are available from: American Standards Association, Inc., 70 E. 45th St., New York 17, N.Y. Price per copy is $1.25.

An Engineers' Day will include a clinic for junior engineers on fan auxiliary equipment, with emphasis on selection of fan drives, electric motors, motor starters, and vibration control. Senior engineers will attend a conference on specification writing.

Contractors' Day will have a technical session for plumbers on connections for steam and hot water boilers, a sheet metal contractors' session on high velocity systems, an air-conditioning contractors' clinic on temperature control systems and a refrigeration contractors' symposium on condensing methods.

Journeyman's Day will feature four sessions as follows: piping men and plumbers—piping; sheet metal men—testing and balancing; power engineers—condenser and boiler maintenance; refrigeration men—defrosting methods.

Five general meetings have been arranged. They are: hospitals—control of air borne infections, schools—what not to do in preparing for future air conditioning, office structures—lighting load versus air conditioning, hotels—ventilation's importance as a part of air conditioning, residential—heat pumps.

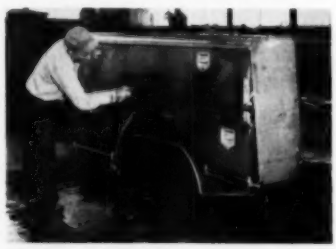
RACE TRACK CLUBHOUSE COOLED BY CARRIER

One of the few air-conditioned race track clubhouse is at Delaware Park, Wilmington, Del. The air-conditioning system, built by Carrier Corp., furnishes cooling to three clubhouse levels.

A hermetic centrifugal refrigeration machine beneath the grandstand supplies chilled water to conditioning apparatus hidden in the first floor cafeteria and Turf Club, the 700-seat dining room on the second floor, and the 250-seat third floor lounge.

Air handling units use damper systems to mix outside air with return air, then pass the mixture through washable filters and across heating and cooling coils. Centrifugal fans send the conditioned air to the areas through ductwork and ceiling diffusers.

LAST-MINUTE SCRUB



KEEP BODY CLEAN! That's the principle of a new process by McCabe-Powers Body Co., to prepare its line of Service-Master bodies for finish painting. The company feels that paint will bond more readily and more securely on the cleanest possible surface. The body is washed inside and out with a chemical solution, as shown, to loosen protective film on steel as well as any dirt or grease picked up during fabrication.

Dealer-Distributor APPOINTMENTS

Two sales representatives have been appointed by **Carrier Corp.** to market unit heaters and heat diffusers in southern Michigan and part of Indiana.

Fontanesi & Kann Co., Detroit, Mich., will sell in the southeastern half of the Michigan Peninsula. **Ner W. Rathbun** of Grand Rapids will cover the southwestern half of the peninsula and some counties in northern Indiana, including South Bend.

•

Four new distributors for its room air-conditioners have been appointed by **Airtemp Div.,** Chrysler Corp. They are: *C. Carson Merchandiser,* Detroit; *Modern Distributors, Inc.,* Oklahoma City; *Corwin-Hall Distributing Co.,* Los Angeles; and *Northeastern Distributors, Inc.,* Cambridge, Massachusetts.

•

Drayer-Hanson's commercial refrigeration products in Spokane, Wash., Northern Idaho and Western Montana will be available through *Climate Control Co.,* Spokane, a new sales distributor organization. Continuing to represent these same areas for air-conditioning products only is General Equipment Co., Spokane.

•

Lehigh Mfg. Co. has appointed *Traco Industrial Corp.,* New York, as its distributor for the metropolitan New York area.

George Wise, president and founder of Traco, has been in the refrigeration business for 28 years.

•

Hagle Sales, Inc., Winter Park, Fla., has been named exclusive Florida sales representative for **International Heater Co.** Hagle will offer the complete heating and air-conditioning equipment line of International. Harry Hagle is president of the sales firm.

PREVENT
Stuck Pumps!
Get USE-PROVEN
PUMP AID

with New, Improved Features.

1. A new RUST INHIBITOR . . . which **vaporizes** and reaches into the smallest crevices —
2. CONTROLLED FOAM DECAY . . . provides full seasonal protection **without** foam at start up time.

Now is the time to prevent stuck pumps . . . and eliminate time consuming repairs during your busiest season — next spring. After draining pump, at shut-down time simply inject PUMP AID into pump housing through drain hole. Aerosol packaged PUMP AID E-X-P-A-N-D-S to cover all interior surfaces. At start-up time — just throw the switch and your pump is running. PUMP AID is water soluble and washes away. Easy-to-follow directions on each can. May be used in any make or model pump.

PUMP AID...

- **PREVENTS CORROSION**
- **PRESERVES SEALS**
- **WILL NOT FREEZE**
- **WILL NOT EVAPORATE**
- **IS WATER SOLUBLE**
- **IS NOT TOXIC**
- **IS EASY TO USE**
- **IS REASONABLY PRICED**

Order by the case of twelve cans today from your dealer and be prepared when shut-down time comes. Or write . . .

GUARANTEED Vapco PRODUCTS

Complete literature on request or see your dealer TODAY!

GARMAN COMPANY
ST LOUIS 23, MO

Circle No. 67 on Reader Service Card

OPPORTUNITIES

(Classified Advertising)

Rates: for "Positions Wanted," $6.50 minimum, limit 25 words. For all other classifications, $8.00 minimum for 25 words or under, each additional word 20¢. Boldface type or all capitals, $10.00 minimum for 25 words or under, each additional word 25¢. All classified advertising payable in advance.

SODA FOUNTAIN & CARBONATOR PARTS, All makes, replaced new, repaired or exchanged, 24 hour shipment, factory guarantee, Trade discounts to servicemen & dealers. Catalog $2.00, refundable. MACON FOUNTAIN SERVICE, P.O. Box 864A, Macon, Ga.

NATURAL GAS COOLS UTILITY'S SHOW ROOMS

An unusual water chilling machine, powered by natural gas, air-conditions the display areas of Milwaukee Gas Light Co.'s main office building.

Replacing the customary electric motor or steam turbine power source, this centrifugal cooling unit is driven by a piston engine using natural gas as the fuel.

Installed to dramatize gas as an energy source, it operates at a cost which compares favorably with other types of systems. The company points out that at six cents a therm — its rate for gas used for cooling — the Waukesha engine's operating cost is equal to what would be charged if electricity could be bought at less than one cent per kilowatt hour.

The system uses a standard Carrier centrifugal compressor, condenser and cooler with interconnecting piping of 150 tons cooling capacity.

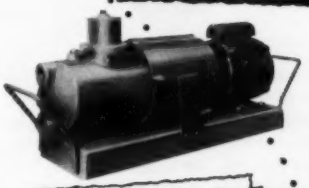
RECORD SIZE UNITS SHIPPED FROM L.A.

Largest refrigeration units ever shipped from the West Coast are three "Dri-Fan" evaporative condensers, built by Recold Corp. The three, one-piece, 233 ton capacity condensers are for use in the San Miguel Brewery in the Philippines. The condensers are valued at about $70,000 and measure 22′ long. 10′ high, 8′ wide. They are factory assembled and shipped as a single unit.

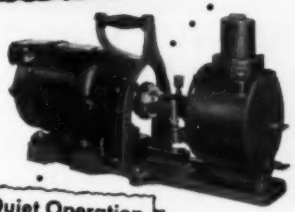
Servicemen Agree...

BEACH-RUSS
PORTABLE VACUUM PUMPS
are made with features they desire

High Performance Characteristics
Completely Portable



Automatic Lubrication
Single- or Two-Stage
Long Life



Quiet Operation
Minimum Attention
Valves Eliminated

Beach-Russ Vacuum Pumps are also made in types and sizes for evacuation and testing of refrigeration equipment on a production basis.

BEACH-RUSS COMPANY
6200 GRAYBAR BLDG., NEW YORK 17, N. Y.

Send descriptive literature covering
☐ Model O Single-Stage Vacuum Pumps.
☐ Model A Two-Stage Pumps.

NAME.....
COMPANY.....
ADDRESS.....
CITY..... ZONE..... STATE.....

BEACH-RUSS CO.
6200 GRAYBAR BUILDING
NEW YORK 17, N. Y.

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Circle No. 68 on Reader Service Card



You can do a bigger and better selling job with Coldin Cases . . . the largest and most diversified line of quality Commercial Refrigerators in America. Get all the extra advantages that only the leader can offer. Call, write or wire for details and catalog today.

COLDIN
CABINET CO., Inc.
2800 Webster Ave., N. Y. 58, N. Y.

FOR THE RIGHT



CAPILLARY IN A RUSH . . . SEE YOUR SEALED UNIT PARTS JOBBER!

Sealed Unit Parts Speed-up Orders Filled Promptly. An impatient customer. A capillary seldom found. Your Sealed Unit Jobber can help you in a hurry. Sealed Unit unique factory order service enables him to give you the fastest delivery in the industry on the finest capillaries in the world.

Why not take advantage of Sealed Unit's superior service now? Use your Capillary Reference Guide to choose the quality Capillary that's designed for the job.

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1178 East 180th St. • New York 60, N. Y.

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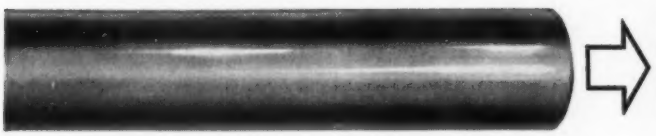
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